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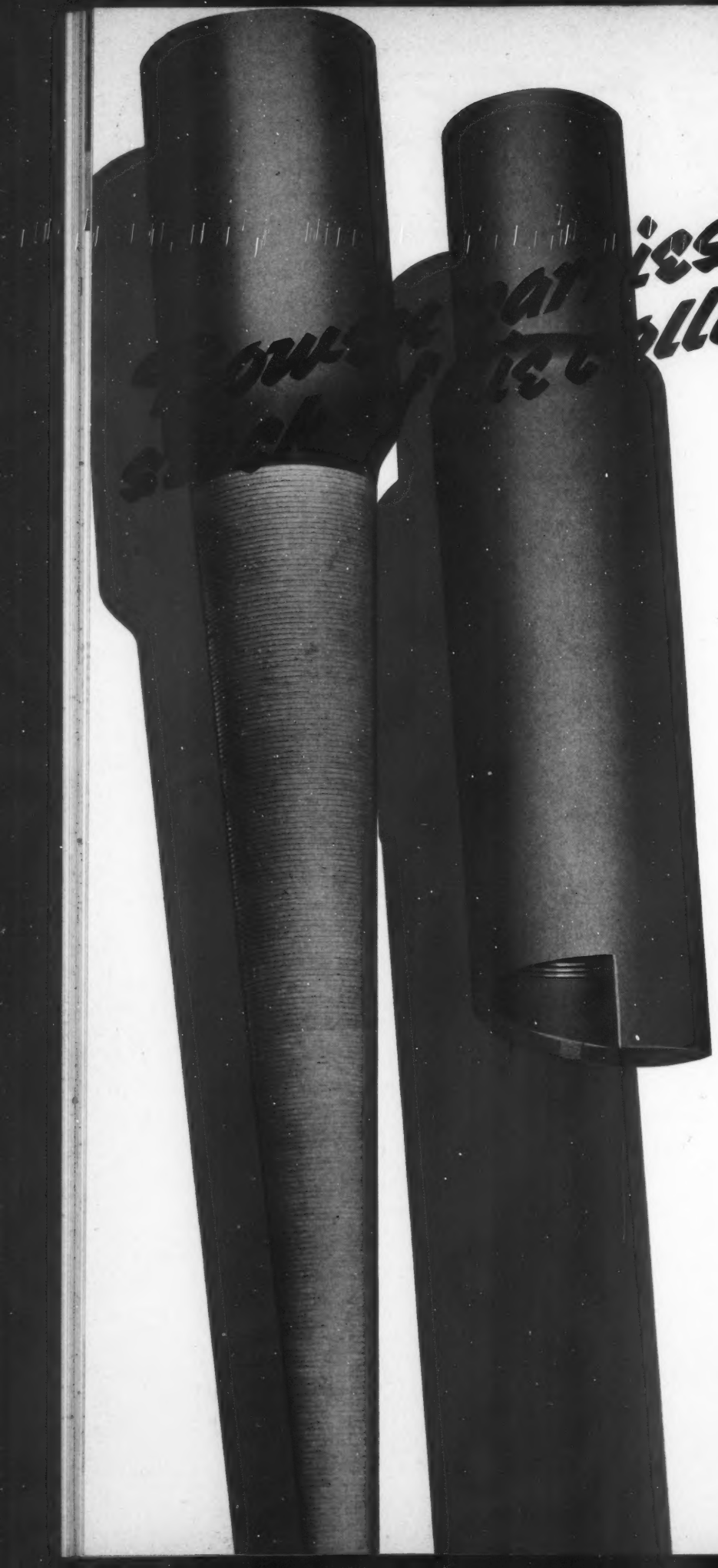

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OIL WORLD
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THE AUTHORITY ON THE CALIFORNIA OIL INDUSTRY

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November 10, 1938

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An alert group of experts faced the unusually frank speakers at the Los Angeles A. I. M. M. E. two-day meeting. Left to right are: Walter Miller, Southern California Gas Co.; Joe Robinson, Union Oil Co.; Tom Cullen, Elliot Core Drilling Co.; Mrs. Larry Lee; Archibald Gandy, Pacific Western, and George Anderson, Baker Oil Tools, Inc.

Engineering Progress is Analyzed Candidly

at Los Angeles A. I. M. M. E. Sessions

An up-to-the-minute resume of what the petroleum engineers and technologists are doing and thinking in California was presented at the two-day sessions of the Pacific Coast's petroleum division of the American Institute of Mining and Metallurgical Engineers in Los Angeles, Oct. 20-21. A record breaking attendance attested to the interest aroused by the program announced for the sessions. Presiding officers were E. P. Parks, chairman of the Southern California Section, and Harry P. Stoltz, program chairman.

The selection of subjects gave a candid as well as clear view of modern trends in drilling equipment, procedures, economics, and the treatment of the subjects indicated that engineers are finding firmer ground for applications which were once considered purely in the realm of the theorist. Without exception, the papers presented had an appealing frankness which speaks well for future rapid development of drilling and production practices to make each oil well "a permanent and profitable producing plant requiring minimum maintenance."

The Pacific Coast division awarded three prizes for outstanding work. A first prize of $75 was given to Iliff Anderson and Harry B. Allen of the University of California at Los Angeles for their paper "A Stratographic Study of the Caliente Mountain's Miocene Zone". A second prize of $15 was awarded to John Jordon of the same school for his paper on "Geology of the Middle Butte Ore Deposit and the Southeastern Part of the Middle Butte in Kern County". Third prize was awarded to George Gallagher for his paper on "Engineering Aspects of Volcanology, With Emphasis on the Volcanos of Hawaii".

A. H. Bell of Continental Oil Co., stated in the abstract of his paper on Modern Trend in Drilling Equipment that "Recent drilling activity has stimulated the development of drilling equipment in two directions: light portable outfits for shallow wells with emphasis on mobility and rigging up speed; higher derricks and more powerful machinery properly unitized to reduce drilling time to excessively deep horizons. The latter phase, of greater present import, is under field test now and will prove or disprove the net operating and economic desirability of tallest derricks and heaviest equipment subject to advances in drilling technique. The many improvements in auxiliary equipment such as unitized mud tanks with integral screens, mud pump manifolds, steel casing racks, boiler plant refinements, etc., are proving very valuable. New high strength drill pipe has pushed wire line into the fore as the limitation upon practicable maximum depths".

From his experience in "Multiple Zone Wells and Casing and Cementing Practices as Developed at the Wilmington Field," C. James Dean of General Petroleum Corp., concluded in his paper of that title: 1. Individual zone wells in general are better practice than multiple zone wells. Multiple zone completions have value only in special cases. 2. The division of a thick oil sand body, zone, or series of zones, into short producing intervals, is advantageous from the standpoint of ultimate recovery. The exploitation should be by individual zone wells in so far as economic practice permits. 3. Progressive technique may broaden the useful scope of multiple zone wells but doubtfully will the method ever become a major improvement in good oil field practice. 4. The sectional liner method is preferable for cementing short blank sections to exclude waters. Its use for this purpose is recommended in straight holes having inclination angles of less than ten degrees. The union of liners should never be made near a kink in any hole. 5. The method using cement retainers and inverted baskets is favored for crooked holes. This method may also be used to advantage to do individual cement jobs at the top and bottom of long blank sections. This procedure offers greater assurance of obtaining top and bottom water shutoffs than a single stage job. 6. New methods of multiple stage cementing, scabbing and repair of perforated intervals, give promise of proving worthy of general use."

Dr. Stanley C. Herold presented his thoughts candidly on the subject of Field Development and Field Operation. The abstract of his paper follows: This paper is intended to be a sequel to last year's: "A Quarter Century of Progress in Petroleum Engineering Concepts". The planning of field development and field operations is discussed with relation to three major problems thereof, namely, well spacing, rate of withdrawal and ultimate recovery. Each of these topics is reviewed with respect to present thought and future necessity. Some of the fallacious notions which seem to be pretty well embeded in the minds of technologists are attacked, and substitute ideas are offered in the light of analytical principles of production. The history of these analytical principles is related briefly, and their acceptance is given consideration. Bitter opposition is acknowledged.

In suggesting technological needs of the immediate future the author challenges the concepts of well performance

At left is Dr. O. P. Jenkins, California State Mining Bureau, and his new geological map of the State. Right, Mrs. E. Wallis is recording registration for R. H. Pence.

and reservoir performance held by engineers in the Mid-Continent and Eastern regions of the United States. Engineers of the other regions are advised to become acquainted with the proper technology all engineers will be ready to in order to understand better the nature of the reservoirs with which they must deal. With acceptance of the proper technology all engineers will be ready to pull together toward a more complete comprehension of events and conditions within reservoirs which contain a heterogeneous mixture of bubbles of free gas dispersed throughout a mass of oil within a porous formation.

Summarizing "Current Practices in Drilling Procedure," Victor J. Beissinger of Richfield Oil Corp., the author, said: "Current practices followed in the drilling procedure of today summarily emphasize the value of hole conditioning. The trend to drill as much open hole ahead as the subsurface condition will permit demands increased attention on the part of management, engineers, and field men alike. The collection of data pertaining to the work must be supplemented by a systematic correlation of such information. Subsurface drilling factors will vary no more than the nature, attitude, and content, of the formations encountered, and the extent of further advances in drilling procedure will depend largely on the fundamental value of the working data. Because this information is obtained from the regular tour report forms, it has been suggested that the accuracy of such data should receive more attention. Test runs to assist in the practice of logging the effect of the primary drilling factors with respect to the rate of drilling will substantially accomplish this purpose . . . Noteworthy among the drilling practices of 1938 is the mud conditioning procedure under the supervision or advice of qualified "mud engineers", the directional drilling procedure carried out under the direct supervision of the field engineers, the application of reduced pressure drilling through potentially productive horizons, and the tapered hole procedure for drilling through sections of troublesome formations."

Walter English, of Superior Oil Co., introduced a group of presentations on the Interpretation of Deeply Buried Structures. Papers in this group were: "Theory of Seismic Reflection Prospecting," by Willard H. Tracy; "Reflection Prospecting Seismograph Instruments," by Arthur Nomann; "Seismograph Field Operations," by Frank Ittner, and "Determining Geologic Structure from Seismograph Records," by P. C. Kelly. All of the writers are with Superior Oil Co.

In his introduction Mr. Walters spoke as follows:

"We have prepared four papers dealing with various aspects of seismograph prospecting in such a way that we hope that they will be understandable by those who have no previous knowledge of the subject. Many people have an inferiority complex with regard to mathematics, and are discouraged from studying seismograph prospecting under the mistaken assumption that the mathematical requirements are severe. You will note that there is not a single mathematical equation in any one of the papers here presented. . . .

"Much of the territory in the United States suitable to seismograph work has already been shot over in more or less detail. Those who will be successful in the future will have to find favorable structure which were previously overlooked. Improvements in instruments and field methods will be a factor, but one must be able to distinguish between real improvements and non-essential talking points or misleading instrumental modifications of the vibrations returned by the earth. Possibly the largest factor will be the ability to recognize obscure leads where the best instruments and methods do not produce clear cut results. The geologist has become accustomed to surface mapping. He will have to do the same thing for structures found by the seismograph. Each organization would do well to develop somewhere within itself the ability to judge accurately of the real merit of seismograph results which may give an obscure clew to a new oil field or which may be only misinterpretation of poor or misleading records."

S. Grinsfelder of Union Oil Co., in his paper, "A Resume of the Technique and Economics of Coring," says: "There is no set of rules for the best coring practice since the technique applied to attain maximum recovery is dependent on the formation cored and the core barrel being used. In addition to operations at the surface which include table speed, weight on the core head, pump pressure and the condition of the drilling mud, several additional factors influence core recovery. These are (1) straightness of the core barrel or drill collar, (2) the distance of the core catcher from the cutting face, (3) the design of the core catcher, (4) the trueness of the circle of the cutting face, (5) the design which permits the core to pass into the barrel continuously in its natural state, and (6) the relief of mud pressure from within the barrel. This relief of pressure is dependent on the design of the valve permitting the same and the clearance between the inner and outer barrels."

"Core Analysis," a presentation by Howard C. Pyle and John E. Sherborne, or Union Oil Co., is abstracted thus: "Methods of core analysis are outlined and the following correlations of the various data obtained are established: 1. An inverse relationship between permeability and water saturation. 2. An increase in specific productivity index with an increase in permeability. 3. A relation between oil saturation and oil characteristics. 4. An inverse variation between interstitial water salinities and electric-log resistivities.

"The application of these correlations makes possible the prediction of the relative productivity of a cored interval and the nature of the productive fluids. Core analysis data aid both in drilling exploratory wells and in producing fields where gas and water production may be encountered. Core analysis provides data pertinent to the estimation of reserves by volumetric methods. Classification and porosity of producible sand are directly obtainable, while factors for connate water and non-recoverable oil

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are available from generalized correlations."

Regarding their presentation "Gravitational Concentration Gradients in Static Columns of Hydrocarbon Fluids," B. H. Sage and W. N. Lacey, of California Institute of Technology, said: "In the present paper the possible changes in composition with elevation which would result from the establishment of thermodynamic equilibrium in a uniform gravitational field were evaluated for three different hydrocarbon mixtures about whose properties there was enough experimental information available to permit the calculations to be made. The calculations would not apply unless the materials had been in place long enough for equilibrium to be established. Due to limitations in the present knowledge of hydrocarbon behavior, it was necessary to assume that the materials involved have some of the properties of ideal solutions. The results were obtained for the case of constant temperature but it is believed that the presence of such temperature gradients as are found in underground formations would cause enhancement rather than diminution of the effects indicated."

"A Suggested Cause and Measure of Retrograde Condensation and Retrograde Vaporization," by W. H. Geis, consulting engineer, is abstracted thus: "Retrograde condensation is that which occurs when pressures are reduced or temperatures increased . . . . Retrograde vaporization precedes retrograde condensation and is stated to be a function of the reservoir condition. The cause suggested involves the solvent action of oil on gas or free gas on oil. A measure of this action is attempted by determining the changes in the volume of free gas recovered per unit of space as relative oil and gas concentrations change under isobaric conditions . . . . Retrograde vaporization is concluded to be a comprehensive factor in deep seated reservoirs and may result in large quantities of oil existing in the vapor phase. Upon the reduction of pressure this oil is condensed either in the reservoir, in the well or in the gas separators and becomes a part of the oil upon which gas oil ratio values are based. Reversing the process and by analyzing gas oil ratios into their component parts, namely the bubble point volume, the formation volume, the free gas, the free gas volume and noting changes in the latter per unit of space the extent of retrograde vaporization in a reservoir can be prophesied."

In "Mechanical Formation Testing," D. T. Hoenshell, of Kettleman North Dome Association, said: "The technique employed now (by KNDA) is the result of experience, elimination of certain types of packers and equipment, and the designing of other pieces of equipment to meet local needs of the operators.

"It is realized that conditions governing both shoe and formation testing will vary in different fields. Certain practices in one field may prove disastrous in another. There are, however, some fundamentals which if adhered to will yield satisfactory tests. Care in centering the pilot or rat hole, selection of formation shoulders, conditioning of shoulder or seat for the packers, good mud control, and intelligent cooperation of the rig crew will go a long way toward making a successful formation test."

Lack of Wage-Hour Information

Has Employers in Quandry

With the Wage-Hour Act in effect since Oct. 24, and with practically no concrete information from the Administrator up to this time, it became necessary for the industry to have at least information as to the attitude of the Administrator and his legal staff on the following points, all of which have been raised in letters to the National Petroleum Assn. (a) General application to the oil industry. (b) Are producers covered.

(1) If oil is sold to pipeline or refinery located in same state in which oil is produced?
(2) If the oil is sold for transportation outside of state where produced?

(c) Are refineries covered
(1) Oil produced within state, products sold within state?
(2) Oil produced outside state, products sold within state?
(3) Oil produced within state, products sold outside state?
(4) Oil produced within and outside state, products sold outside state?

(d) Definition administrative, executive, professional, outside salesmen.
(e) Definition board, lodging, or other facilities furnished, including houses rented to employes.

Therefore, the following is offered for your information as being the **trend of thinking** in the Wage and Hour Division of the Department of Labor.

There will unquestionably be disagreements with the position which the Administrator will take on certain of these matters, and there will undoubtedly be many who feel their operations are not subject to either the 44-hour maximum work week or the 25-cent minimum wages.

However, in reaching such a determination as a basis for disregarding the provisions of the Act, it is extremely important to recognize that in the final analysis each employer will be compelled in all probability to defend his decision in a court of law.

If the courts decide that he was subject to the Act, he will be subject to a fine of not more than ten thousand dollars ($10,000) or to imprisonment for not more than six months or both, and in addition will be liable to the employes affected in the amount of their unpaid minimum wages or their unpaid overtime compensation, as the case may be, and in addition an equal amount as liquidated damages (or, for double the unpaid wages) and also reasonable attorney's fees to the employe's lawyer.

(a) General Application to Oil Industry.

The Act does not permit averaging of hours. Any time over 44 hours must be paid for at 1½ **the regular rate.** Section 18 of the Act provides:

"No provision of this Act shall justify any employer in reducing a wage paid by him which is in excess of the applicable minimum wage under this Act, or justify any employer in increasing hours of employment maintained by him which are shorter than the maximum hours applicable under this Act."

There has been much discussion of this point by employers, one group holding this amounts to a "pious hope" on the part of Congress, which the Courts will disregard. Under this line of reasoning, it would appear possible, where an employe is working more than 44 hours, to rearrange his wage rate so that paying overtime on that rate will equal the same weekly wage he is getting at present.

On the other hand, it is pointed out that the Act provides that overtime must be paid for at "one and one-half the **regular rate of pay"**, and that the risk of a court holding that the present rate of pay was **"the regular rate"** is too great to warrant rearrangement of wage rates.

The rather common practice of one employe's working two shifts in case his relief does not show up would require payment of overtime if the man actually worked more than 44 hours that week.

The "work week" covered by the Act is the payroll period. It can be from Monday to Saturday, Wednesday to Tuesday, etc.

(b) Are Producers Subject to Act?

One of the questions most frequently asked is whether the Act applies to producers whose crude production is either sold to a pipeline company or to

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THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

a refiner located in the same state in which the oil is produced.

In discussing this with lawyers representing the Wage and Hour Division, it becomes apparent that there is a very firm opinion on their part that such a producer is under the Wage and Hour Law.

This opinion is based on their interpretation of producing goods for commerce. Under their interpretation they intend to trace all manufactured articles back and include the raw materials going into the finished article.

Some relief might be secured for producers by having a definition of what constitutes "hour of work". For instance, where a man is tending a lease and is required to see that the pumps operate continuously, which in turn requires that he be rather constantly available in the event of a breakdown, it would seem that a ruling to the effect that his hours of work were the hours in which he actually worked on repairing the pumps would eliminate a large part of the producers' problem.

(c) Are Refineries Covered?

With respect to refiners, there is less doubt that they do come under the Act. The only conceivable situation where a refiner might not be under the Act would be where he could prove all his raw material was produced in the state in which his plant is located and that none of his products were sold outside the state.

(d) Definitions of Executives, Etc.

The Administrator is required by the Act to define and delimit executive, administrative, professional employes, and employes engaged in local retailing. The first regulations defining these terms have been issued and provide for changes and additions in these regulations.

Working foremen will not be exempt under these definitions and it is improbable any future regulations will change this.

The definitions of all these terms will state that the executive, administrative, professional, or local retailing employe will not be exempt if he does a substantial amount of work of the same nature as non-exempt employes perform.

Stork Visits Two Pemberton Aides

Two members of the personne. of the office of J. R. Pemberton, oil umpire for the Central Committee of California Oil Producers, have added to the future prestige of the oil industry. On Oct. 11, a six-pound daughter arrived at the home of Mr. and Mrs. Gilbert Hamlett, of 1857 Midvale Ave., and on Oct. 23, a seven-pound daughter was presented to Mr. and Mrs. Harold Clark, of 318 North Windsor Blvd. Mr. Hamlett is statistician for the umpire, and Mr. Clark is an engineer for Mr. Pemberton. The names will be Miss Nancy Hamlett, and Miss Helen Ann Clark.

Dawson Promoted G. P. Sales Manager

Appointment of Don Dawson as general sales manager of General Petroleum Corporation was just announced by A. H. DeFriest, vice president, at a general sales meeting held in Los Angeles. Dawson succeeds Marc D. Leh, who recently resigned.

Don Dawson

Coming to his new position with a strong background of experience in many phases of the oil industry, Dawson has been associated with the marketers of Mobilgas and Mobiloil since January, 1920. Following completion of his education at Stanford University, he first served in oil production activities in various fields of Southern California and San Joaquin Valley.

Shortly after General Petroleum began its retail marketing in the Northwest, Dawson went to Seattle as division manager. Since then his work has been divided between the Northwest and Southern California marketing areas, until March 15 of this year, when he was appointed assistant general sales manager, from which his promotion to general sales manager is now announced.

In addition to the home office sales staff, others attending the current marketing conference in Los Angeles included Albert E. Horn, Jr., general manager of Oregon and Washington divisions; A. J. Donnelly, general manager of Northern California division; and C. H. Wartman, general manager of the company's Southern California division.

Corporate Status For Parkhill-Wade

According to the announcement of the recently formed board of directors, the firm of Parkhill-Wade, consulting and construction engineers, formerly a partnership, will become a corporation as of Nov. 1, 1938. Officers of the new corporation are Henry N. Wade, president; C. L. Parkhill, vice president; H. D. Thompson, secretary - treasurer; Ruth Magaw, assistant secretary-treasurer. The board of directors will include Henry N. Wade, C. L. Parkhill and Roy Lacy. The change-over from the partnership to corporate status involves no change in the organization, personnel or policies.

The firm of Parkhill-Wade was formed in 1932 and it is prominently known throughout California as designers and erectors of natural gasoline, repressuring, pressure maintenance, butane production and butane standby plants. Collaborating in the Mid-Continent with The Stearns-Roger Manufacturing Co. of Denver, Colo., Parkhill-Wade have been identified in the engineering and design of a large proportion of the natural gasoline plants erected in that area since the firm's inception.

Richfield Nine Months Shows $1,391,579 Profit

Richfield Oil Corp. and subsidiary companies report for the nine months ended Sept. 30, 1938, consolidated net profit, after all charges including estimated provision for Federal Income Taxes of $1,391,579, equivalent to 34.7 cents a share on the 4,010,000 shares of common stock outstanding. Inasmuch as the company was reorganized March 13, 1937, comparison for the corresponding period a year ago is unavailable.

Sales, excluding State and Federal gasoline and oil taxes, amounted to $30,370,642. Other operating revenue during the period totaled $1,073,389, bringing total operating income to $31,444,031.

NOTICE OF NEW PUBLICATION

The U. S. Bureau of Mines has recently issued Report of Investigations 3417, entitled "Survey of Crude Oil in Storage 1936-1937." This report, which comprises about 50 pages of text, tables, and charts, analyzes crude-oil stocks for 1936 and 1937, both quantitatively and qualitatively. Your name may be on one of the mailing lists already utilized, but in case you desire a copy it may be obtained by writing to the Publications Section, Bureau of Mines, Washington, D. C.

Gas Repressuring—Underground Storage

Plant Completed at North Belridge

Constituting the fulfillment of a long cherished and carefully developed plan, the Belridge Oil Co. has recently put into operation a new compressor plant, located on its property at North Belridge. It is of particular interest since it is the first major plant installation of this sort in the California fields designed exclusively for the purpose of repressuring and the storage of surplus dry gas in the formation.

Since the technical line of demarcation between the operations of repressuring and pressure maintenance may be somewhat obscure, this installation might also be classified under the latter heading. For the past two months, approximately ten million cubic feet of dry gas per day has been put back into the Temblor zone through four wells situated along the flank of the structure. Injection pressures have averaged from 1700 to 1800 pounds with no evidence as yet of a tendency for this required pressure to increase.

The plant consists of six Cooper-Bessemer Type GMR, four cylinder, two cycle, 300 H.P. angle compressor units. Two of these are used for the incidental purpose of collecting vacuum gas from the field and boosting into the nearby absorption plant. The other four take gas from the absorption plant at around 450 pounds, compressing to the injection pressure of 1800 lbs. in two stages on each unit. No intercooling is used between stages and the discharge of the first stage compressor is carried to the suction of the second stage through a tube turn, thus eliminating expensive interstage headers and piping.

The power cylinders of the engine are 12″ x 14″ bore and stroke, the compressors 14″ stroke. The two cycle power cylinders are scavenged at an unusually low pressure with a large surplus of scavenging air. This feature combined with oil cooled power pistons and improved jacket water circulation accounts for the low operating temperatures throughout, on pistons, piston rings, cylinder walls, etc. The improved scavenging plus the timed fuel injection result in fuel economy equal to that of four cycle engines.

Lubrication of all bearings is under positive pressure, the oil being cooled and filtered. Starting by air is accomplished with surprising rapidity.

Main bearings are constructed with removable, babbit lined, steel shells in their lower halves, which can be rolled out of place easily, with babbit lined caps for their upper halves. Crank pin bearings are precision type, babbit lined steel shells. Crank throws are at 90° resulting in exceptional balance and smooth operation.

A noteworthy feature of the compressor cylinders used on the high pressure work is that they are of the single acting type, with the plate suction valves in the head of the piston. In this manner the rod packing is not exposed to the high pressures.

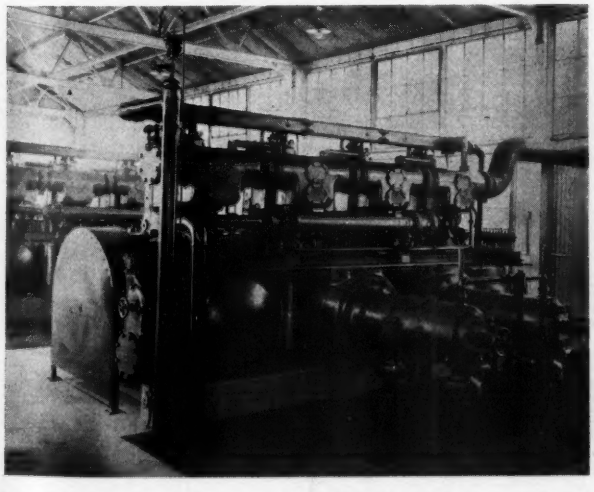
Egloff is Nominated Chemical Society Head

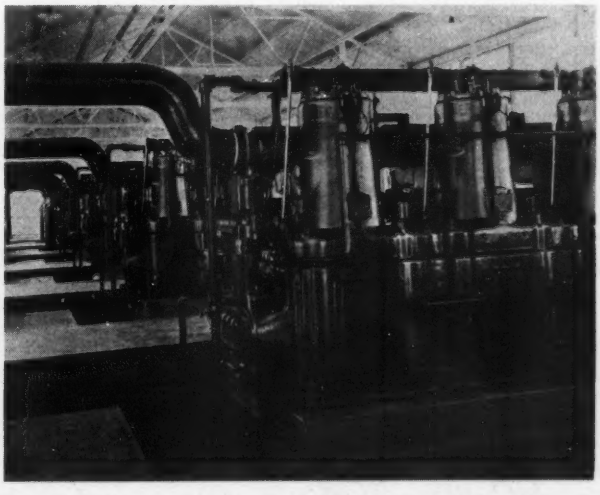
Dr. Gustav Egloff, director of research, Universal Oil Products Company, has been nominated for the presidency of the American Chemical Society. Election will be held early next month.

Dr. Egloff has been prominent for years in hydrocarbon research and in development of the Dubbs cracking process as well as other Universal processes. About 300 patents have been issued to him in this country and abroad.

Dr. Egloff was born in New York City in 1886 and attended Cornell and Columbia universities, receiving his Ph.D. from Columbia in 1916. He was a member of the staff of the Bureau of Mines and chief chemist of the Aetna Chemical Company, leaving that position to join Universal.

Dr. Egloff has been a lecturer at Columbia, Princeton, Chicago, Harvard, Northwestern, California and Stanford universities and has been a delegate to many world conferences and congresses. He was president of the American delegation to the World Petroleum Congress in Paris in 1937, and has been named vice-president of the Congress for 1940. He has been a councilor at large of the American Chemical Society since 1936,





Six of these Cooper-Bessemer Type GMR, four-cylinder, two-cycle, 300 h.p. angle compressor units are in operation at Belridge Oil Co.'s new plant at North Belridge.

and was president of the Chicago Chemists Club in 1934. He is a member of many scientific societies, and has contributed over 350 papers to the literature as well as writing three books on hydrocarbons. A four volume work on the physical constants of hydrocarbons is being prepared, the first volume of which will appear about January 15th.

Bureau Analyzes Gatchell 2 Oil

The crude oil produced from the recently discovered deep pay horizon (Avenal sand presumably of Eocene age) in the Eastside Coalinga field, is an intermediate base oil having a gravity of 33.4° A.P.I., and a sulphur content of 0.22%, according to an analysis made by the Bureau of Mines, United States Department of the Interior, on a sample obtained from Gatchell Well No. 2, completed during June 1938 at a total depth of 6,908 feet, in pay formation topped at 6,814 feet.

The distillation summary of the oil includes 26.9% of gasoline and naptha, 4.4% of kerosene distillate, 22.6% of gas and oil and 20.2% of heavier distillates.

For the past 30 years wells on land immediately adjacent have been producing a good grade of refining oil from depths of 1,400 to 3,500 feet. A composite sample of oil from the Eastside Coalinga field collected by the Bureau of Mines in 1928 had a gravity of 24.0° A.P.I. and a sulphur content of 0.45%. The distillation summary of that oil includes 14.7% of gasoline and naptha, no kerosene distillate, 29.4% of gas oil and 23.7% of heavier distillates.

The Gatchell No. 2 well has been estimated to have a potential production of 20,000 bbls. per day. Since it was brought in, three additional wells have been completed in the immediate vicinity, each of which is believed to have a potential equal to that of the discovery well. The potentials of these latter wells were not determined definitely; the wells having been restricted to a small prorated production immediately on being completed. Whether or not the productive area will prove extensive is yet to be determined.

Interstate pipe lines and water carriers that have annual operating revenues of $500,000 or more have been ordered by the Interstate Commerce Commission to render quarterly reports of transportation revenues. In addition, pipe lines have been ordered to designate the total number of barrels of oil originated on their lines and received from connections.

September Slump In Gasoline Sales

Gasoline sales throughout California, as indicated by motor vehicle fuel tax revenue, dropped 5.43% during September as compared with the same month of the previous year, the State Board of Equalization reported today.

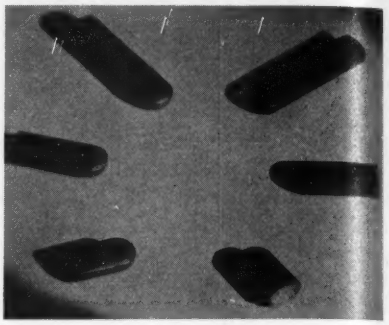
Last month's tax amounted to $4,277,422.50 as compared with $4,523,409.84 reported for September, 1937. The month's income also was well below the tax of $4,742,539.08 reported for August of the current year.

The September gasoline tax was based on the distribution of 142,580,750 gallons of gasoline, or 8,199,577 gallons less than for September, 1937.

Name	Gallons Actually Sold	Net Taxable Gallonage
Aromalene, Inc.	661,647	643,162
Bankline Oil Company	326,720	None
Barnsdall Oil Co. of Calif.	315,727	None
Belridge Oil Company	1,523,458	101,998
Brown, Henry, dba. Operators Oil & Refining	749,887	749,887
Caminol Company Ltd., The	2,454,041	2,360,522
Century Oil Company	1,331,332	1,326,591
Chanslor-Canfield Midway Oil Co.	309,805	None
Coline Gasoline Corporation	761,241	972
Cowan Oil & Refining Co.	521,607	None
Del Rey Oil & Gas Company	623,917	None
Eagle Oil & Ref. Co., Inc.	1,457,216	1,435,563
East West Refining Co.	538,601	270,407
El Camino Refining Co.	1,094,201	1,059,262
Elm Oil Co., Ltd.	425,053	425,053
El Tejon Oil & Refining Corp.	938,329	922,474
Envoy Petroleum Company	858,502	858,502
Estado Petroleum Corporation	1,809,897	1,809,627
Exeter Refining Company	1,503,302	1,503,268
Five C Refining Company	328,724	328,709
Fletcher Oil Company, Inc.	2,288,205	None
F. R. Long, Inc.	1,521,976	None
Gen. Pet. Corp. of Calif.	25,497,206	5,536,565
Gilmore-Dabney, Inc.	471,824	1,315
Gilmore Oil Company	6,169,418	113,211
Hancock Oil Co. of Calif.	5,150,600	3,767,245
Harbor Refining Company	741,215	734,431
Honolulu Oil Corporation	701,945	7,865
Kettleman Oil Corp., Ltd.	309,476	None
Krieger Oil Company	440,492	376,631
Lomita Gasoline Company	1,745,930	None
Los Nietos Producing & Ref.	3,050,886	779,559
Macmillan Petroleum Corp.	2,825,126	2,609,635
Maguire Oil & Ref. Corp.	335,951	341,720
McCallen Refining Company	1,162,912	1,162,912
Meek, Herbert A., dba. Henry H. Cross Co. of Calif.	458,866	None
Mercury Petroleum Corp.	422,666	425,666
Moffett, J. O. (S. F. Ref.)	343,907	343,893
Mohawk Petroleum Corp.	3,850,244	3,545,536
Norwalk Company, The	1,986,111	1,566,190
O. C. Field Gasoline Corp.	2,298,143	124,160
O. F. Collinge, Inc.	521,070	None
Olsen, G. A. receiver, Sunland Refining Corporation	333,379	674
Olympic Refining Company	1,058,972	1,056,622
Pacific States Oil & Terms.	2,288,460	2,029,664
Pacific Western Oil Corp.	535,104	897
Petrol Corporation, The	1,625,302	878,243
Petrolane, Ltd.	382,937	187,524
Richfield Oil Corporation	17,820,591	11,743,788
Rio Grande Oil, Inc.	3,725,927	None
Rothschild Oil Company	930,161	924,850
R. R. Bush Oil Company	1,240,907	1,101,174
Seaboard Oil Co. of Dela.	1,543,596	None
Seaside Oil Company	3,732,868	1,319,526
Shell Oil Company	27,534,609	17,447,729
Signal Oil & Gas Company	1,410,889	None
Signal Oil Company	5,594,826	None
Socal Oil & Refining Co.	783,391	783,391
Standard Oil Co. of Calif.	57,857,394	26,963,956
St. Helens Pet. Co., Ltd.	1,220,745	1,220,715
Sunset Oil Company	2,476,158	None
Superior Oil Company	2,512,776	33,570
Texas Company, The	9,472,125	7,753,882
Tide Water Assoc. Oil Co.	27,852,904	10,022,257
Triangle Oil & Ref. Co., Ltd.	650,920	650,920
Union Oil Co. of California	17,864,413	13,993,399
Walter Steiner Refining Co.	603,872	602,872
West Coast Refining Co.	437,649	None
Western States Gasoline Corp.	3,804,705	219,505
Wilshire Oil Co., Inc.	8,649,876	7,997,414

New Well Bit Inserts By Haynes Stellite Co.

Haynes Stellite Co., Kokomo, Ind., has recently developed a new design of Haystellite tungsten carbide inserts for hard-setting oil well drilling and coring



The three sizes of Haystellite inserts, showing the new design.

bits. They are now being manufactured in three new sizes, No. 14, No. 15, and No. 16. All have the same cross-section, but the three different lengths provide for all bit requirements.

The new inserts have a small flat area on one side which keeps them from rocking while the welding operator bonds them into the steel of the bit. Their design also allows them to be supported very rigidly by the steel surrounding them.

The new inserts have the same toughness as the older standard sizes of Haystellite inserts. They form an excellent bond with the tying-in steel, even stronger than previous designs, and resist shattering and breaking to a remarkable degree.

Cold Applied Coatings Catalogue By Amercoat

A new sixteen-page booklet, covering a description of, the uses of, and the application procedure necessary for the various and sundry types of Amercoat cold-applied coatings, is recently off the press.

These coatings are basically synthetic organic plastic in nature. They contain no paint oils and incorporate a series of coatings for resistance to acid and alkali corrosion of the severest sort; coatings for ship bottoms and harbor structures as well as ships' superstructures; coatings for lining steel containers of concentrated acids and alkalies; and metallic and non-metallic coatings for the exterior protection of concrete, metal and wood, machinery, equipment, and structures, according to the American Concrete and Steel Pipe Co., the makers.

PRODUCTION :-: DEVELOPMENT

(Figures of Production and Stocks are in barrels of 42 Gals.)

	Total Production September	—DAILY AVERAGE— Sept., 1938	Aug., 1938	Sept., 1937
Group No. 1				
Belridge—North	376,578	12,553	11,919	16,296
Belridge—South	33,568	1,119	1,070	1,990
Canal	85,630	2,854	2,800	.....
Canfield	2,935	98	93	.....
Coalinga	328,198	10,940	9,878	16,158
Edison	76,666	2,555	2,649	4,054
Elk Hills	312,319	10,411	10,530	11,069
Fruitvale	232,278	7,743	7,806	9,087
Greeley	90,005	3,000	2,994	1,824
Kern River	360,938	12,031	11,431	15,605
Kettleman Middle Dome	1,188	40	44	103
Kettleman North Dome	1,904,033	63,468	64,729	80,500
Lost Hills	104,470	3,482	3,390	4,142
McKittrick	100,861	3,362	3,313	4,439
Midway-Sunset	1,719,944	57,331	58,647	74,402
Mountain View	290,860	9,695	9,547	18,363
Mount Poso	444,317	14,811	15,108	18,948
Rio Bravo	244,558	8,152	8,058	.....
Round Mountain	405,476	13,516	13,807	13,795
Ten Section	246,553	8,218	7,543	3,263
Wasco	11,299	377	399	.....
Wheeler Ridge	9,294	310	310	318
Group No. 2				
Capitan	86,911	2,897	2,698	2,941
Elwood	157,085	5,236	5,472	8,317
Rincon	105,444	3,515	3,669	3,251
San Miguelito	68,853	2,295	2,350	3,332
Santa Barbara	11,390	380	443	599
Santa Maria	587,389	19,580	20,668	12,819
Summerland	953	32	26	25
Ventura Avenue	1,027,135	34,237	34,487	34,935
Ventura-Newhall	159,404	5,313	5,446	5,117
Watsonville	900	30	30	60
Group No. 3				
Brea-Olinda	167,935	5,598	5,642	6,140
Coyote—East	98,659	3,289	3,348	4,112
Coyote—West	243,158	8,105	8,227	7,165
Domingues	751,755	25,059	25,420	29,994
El Segundo	194,971	6,499	7,902	12,688
Huntington Beach	936,244	31,208	31,841	36,048
Inglewood	412,568	13,752	14,130	15,981
Lawndale	1,931	64	80	77
Long Beach	1,678,908	55,964	56,933	59,284
Los Angeles-Salt Lake	17,087	570	438	566
Montebello	371,816	12,394	11,822	8,047
Playa Del Rey	171,819	5,727	5,875	7,847
Potrero	20,331	678	692	236
Richfield	264,601	8,820	9,000	8,786
Rosecrans	427,438	14,248	13,569	3,831
Santa Fe Springs	946,088	31,536	32,709	42,023
Seal Beach	243,550	8,118	8,419	9,296
Torrance	586,273	19,542	17,199	7,620
Whittier	28,724	957	937	913
Wilmington	2,770,669	92,356	94,458	58,778
Total	19,921,957	664,065	669,995	685,184
August	20,769,860	669,995		
Decrease	847,903	5,930		

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Sept. 30, 1938	Aug. 31, 1938	September Changes	Dec. 31, 1937 Reclassified
1. Gasoline-Bearing Crude	33,594,928	33,099,463	+ 495,465	29,417,842
2. Non-Gasoline-Bearing Crude	17,562,544	17,469,970	+ 92,574	14,384,000
3. Unblended Nat. Gas	3,402,834	3,356,516	+ 46,318	2,001,204
4. Gasoline (not including distributing and service stations)	11,663,318	11,400,449	+ 262,869	13,520,678
5. Naphtha Distillates	1,352,247[1]	1,324,354[1]	+ 27,893	1,464,577[1]
6. Gas Oil and Diesel Oil	10,886,653	10,269,247	+ 617,406	8,648,990
7. Fuel Oil Residuum	69,059,522	67,452,679	+1,606,843	54,145,388
8. All Other Stocks	5,715,707	6,094,961	− 379,254	4,457,568
TOTAL	153,237,753	150,467,639	+2,770.114	128,040,247
[1]Estimated amount of unfinished gasoline contained in item 5	1,124,050	1,134,150		1,248,291

	New Rigs Up	Producers Active Drilling	Com-pleted	Daily Initial Output	Active Pro-ducing	ABANDONED WELLS Drillers	Pro-ducers
Group No. 1							
Belridge—North	..	6	....	....	62	....	....
Belridge—South	..	....	....	....	86	....	....
Canal	1	2	2	4,029	12	....	....
Canfield Ranch	..	....	....	....	1	....	....
Coalinga	4	12	3	5,195	808	1	....
Edison	1	....	....	....	85	1	....
Elk Hills	..	....	....	....	167	....	....
Fruitvale	1	1	1	161	171	....	....
Greeley	1	3	....	....	16	....	....
Kern River	4	2	2	26	1,355	....	....
Kettleman Middle Dome	..	....	....	....	3	....	....
Kettleman North Dome	5	9	3	2,687	204	....	1
Lost Hills	..	....	....	....	231	....	....
McKittrick	1	1	....	....	187	....	16
Midway-Sunset	1	4	1	35	2,446	....	....
Mountain View	1	1	....	....	184	....	....
Mount Poso	2	5	1	220	269	2	....
Rio Bravo	..	7	1	3,925	17	....	....
Round Mountain	6	5	2	255	203	1	....
Ten Section	..	2	2	2,835	31	....	....
Wasco	..	3	....	....	2	....	....
Wheeler Ridge	..	1	....	....	28	....	....
Group No. 2							
Capitan	..	....	1	940	49	....	....
Elwood	..	....	....	....	80	....	....
Rincon	..	2	....	....	46	....	....
San Miguelito	1	3	....	....	16	....	....
Santa Barbara	1	1	....	....	33	....	3
Santa Maria	1	3	4	1,971	252	....	1
Summerland	..	....	....	....	18	....	....
Ventura Avenue	1	8	2	3,734	215	....	....
Ventura-Newhall	..	9	1	265	551	2	2
Watsonville	..	....	....	....	7	....	....
Group No. 3							
Brea-Olinda	2	1	....	....	338	....	....
Coyote—East	1	....	....	....	85	....	....
Coyote—West	..	1	....	....	56	....	....
Domingues	1	1	3	1,117	202	....	....
El Segundo	..	....	2	710	59	....	2
Huntington Beach	..	....	....	....	555	1	1
Inglewood	..	....	....	....	206	....	....
Lawndale	..	....	....	....	6	....	....
Long Beach	2	2	1	184	1,259	....	....
Los Angeles-Salt Lake	..	....	....	....	113	....	....
Montebello	1	10	1	673	213	....	2
Newport	..	1	....	....	....	....	....
Playa Del Rey	..	....	....	....	190	....	3
Potrero	..	1	....	....	12	....	....
Richfield	2	1	....	....	298	1	1
Rosecrans	9	11	3	3,262	103	1	....
Santa Fe Springs	..	....	....	....	604	....	1
Seal Beach	..	....	....	....	113	....	....
Torrance	22	31	19	7,086	616	....	....
Whittier	..	....	....	....	141	....	....
Wilmington	14	15	14	14,000	565	....	....
Miscellaneous Drilling	10	41	....	....	....	5	....
Group No. 4—Gas Fields							
Buena Vista Lake	..	....	....	....	1	....	....
Buttonwillow	..	....	....	....	....	....	....
Chowchilla	..	....	....	....	....	....	....
Delano	..	....	....	....	....	....	....
Dudley Ridge	..	....	....	....	....	....	....
Goleta	..	....	....	....	....	....	....
McDonald Island	..	....	....	....	4	....	....
Rio Vista	..	....	....	....	14	....	....
Semi-Tropic	..	....	....	....	1	....	....
Tracy	..	....	....	....	1	....	....
September	96	206	69	53,310	13,590	15	33
August	94	205	102	71,604	13,507	19	18
Increase (*Decrease)	2	1	33*	18,294*	83	4*	15

LAUGH THIS OFF

One of the best natured boys in the oil business is a somewhat obese pumper down at Signal Hill. The barber made a bad gash on this lad's chin the other morning, "But shucks," sezze, "why should I worry? I got three more."

And, by the way, did we ever tell you **Del Sommerville's** story about the absent-minded construction man who bit the end off a hot rivet, and drove a plug of chewing tobacco through the tank plates with his air hammer?

We have a report also from **George Anderson** of the Baker Oil Tools Company that a candid want ad in a local paper reads as follows: "Wanted man with car to drive oil salesman out of town."

A salesman, according to **Bob Roberts,** being a guy who can make you feel that you've longed all your life for something you never heard of.

Speaking of sales, business is definitely improving. **Charlie Schneider** says this is the best October we've had since July Fourth.

And **Marion Dice** declares that a Hynes dairyman was obliged to raise the price of milk a cent a quart in order to give his cows better social conditions.

Incidentally, you should never ask a man if he is in the oil business. If he is, he will be humiliated, and if he isn't he'll be insulted.

Roy Benson went around to call on a pumper who had been retired on pension some years ago. The old fellow was sitting scribbling on a pad, and just as Roy entered he exclaimed in evident excitement, "Dawgone it, Roy, if I ain't learnt to write." "Good," says Roy, "What does it say?" "Don't know," replied the pensioner, "I aint learnt to read yit."

On the subject of reading, a young petroleum engineer dashed into a downtown bookstore the other day, and asked, "Have you a book called "Petroleum Production Efficiency?" The clerk never looked up as he answered, "Fiction at the other counter, please."

There is a real lesson in the next story brought to us by that prince of story tellers, **Dave Kilgour.** It seems that a certain oil magnate was always as busy as a bee, and so one day he woke up to find that somebody had run away with his honey.

Which recalls **Si Delaney's** protest over the treatment he received during one of his sojourns in a local hospital. Si will never forgive the nurse who used to wake him up every night to give him a sleeping tablet.

After all, as **Doug Davis** said, there is one thing that can bring real happiness to any man these days. That is making the final payment.

This one comes from **Roy Fry,** so it must be true: A certain superintendent, noted for his fault-finding propensities, was inspecting a portion of a great pipeline project some time ago. He grumbled at everything—the ditches weren't deep enough, the welding was poor, the coating was awful, and so on. The foreman listened to all the wails as patiently as he could, then rising out of the ditch he looked squarely into the supe's eyes, and asked, "How is she for length, boss?

Proving again **Doc Emmon's** contention that if some people were just half as clever as they think they are, they would still be twice as clever as they really are.

And at the C.N.G.A. banquet, **Sy Fluor** asked an exhuberant guest, "How ya feelin', Bill?" and Bill answered, truthfully enough, "Oh, fair to maudlin'."

As we near the conclusion of another unique collction of insipidities **Oliver Fields** interrupts to inform us that during his trip to England last summer he had the privilege of sitting with kings and queens. He forgot to mention, however, that another guy bobbed up with aces and kings.

Saying which we retire to our igloo, with this simple request: Will someone please explain why it is only when the Democrats are in power that the Republicans know how to run the country, and vice versa?

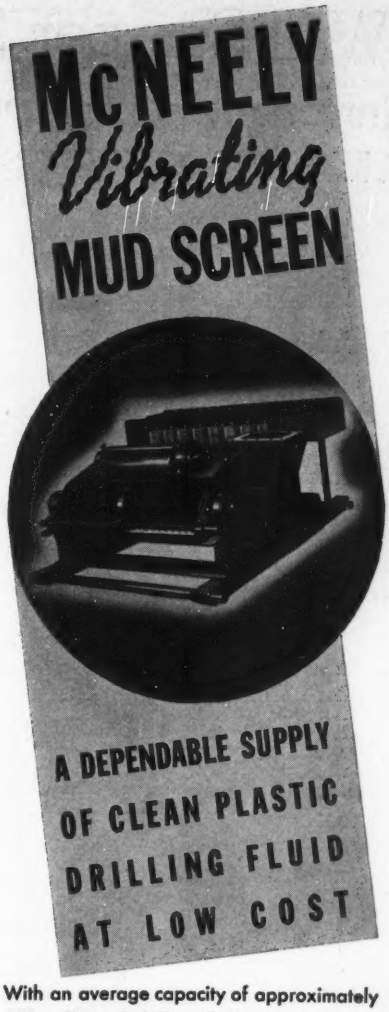
BAKER

The Big Idea in Successfully Cementing Casing is to use equipment which provides in perfect balance the three important features of . . . STRENGTH, VALVE EFFICIENCY and DRILLABILITY.

State Drilling Report

Field	Company	Well.	No.	Sec.	Twp.	Range
		NEW WELLS				
Huntington Beach	J. E. F. Oil Co.	Bruce	1	36	5S	11W
	Apex Petroleum Corp., Ltd.	Harper	1	36	5S	11W
Torrance	R. R. Bush Oil Co.	Gimenez	2	25	4S	14W
	Richfield Oil Corp.	Capital	1	30	4S	13W
	Richfield Oil Corp.	Stone	1	30	4S	13W
	Bandini Petroleum Co.	Bandini-Harbor Developm't	2	25	4S	14W
	Sierra Trading Corp.	Sierra-Spring	1	30	4S	13W
	A. N. Macrate	Kupfer	2	30	4S	13W
	Argus Oil Co.		1	25	4S	14W
Long Beach	A. S. Johnston Drilling Corp.		36	13	4S	13W
Wilmington	Union Pacific Railroad Co.	Union Pacific	98	4	5S	13W
	Union Pacific Railroad Co.	Union Pacific	99	4	5S	13W
	Union Pacific Railroad Co.	Union Pacific	100	3	5S	13W
	Hollywood Oil Co.	Baxter	5	2	5S	13W
Dominguez	Union Oil Co.	Callender	65	32	3S	13W
Rosecrans	Union Oil Co.	Rosecrans	27	19	3S	13W
	The Superior Oil Co.	Maxwell Comm.	12	19	3S	13W
Canal	The Ohio Oil Co.	KCL-E	10	14	30S	25E
Round Mountain	Shell Oil Co.	Jewett	15	29	28S	29E
Kern County	Garner Bros. Oil Co.	Garner	1	6	27S	29E
	Tide Water Assoc. Oil Co.	S. P.	2	15	11N	19W
	Sierra Slope Oil Co.	Michaels	1	25	26S	28E
Rio Bravo	Union Oil Co.	Kernco	7–34	34	28S	25E
Tulare County	Dan Shepperd & Assoc.	Dan Shepperd & Assoc.	1	35	22S	27E
Coalinga	American Oilfields, Inc.	Investment	1	16	19S	15E
Los Angeles County	Hogan Petroleum Co.	Burkhard	2	6	5S	13W
	Mojave Petroleum Co.	Jennings Lease	2	33	5N	14W
Coyote Hills	Bartholomae Oil Corp.	Stern	7	22	3S	10W
Midway	National Oil Co.		31	35	32S	23E
Lost Hills	Tide Water Assoc. Oil Co.	Williamson	10-R	2	26S	20E
Rio Vista Gas	The Superior Oil Co.	Reclamation Board	1	7	3N	3E
		DEEPEN OR REDRILL				
Dominguez	Union Oil Co.	Callender	1 & 58	33	3S	13W
Potrero	Beloil Corp., Ltd.	Fee	1	28	2S	14W
Torrance	Packard Petroleum Corp.	Lomita	2	23	4S	14W
Santa Maria	Rice Ranch Oil Co.	Brookshire	11	23	9N	34W
Poso Creek	D. D. Angle	Bargol Claflin	2	10	27S	27E
Mountain View	Hogan Petroleum Co.	Mid State	1	29	30S	29E
Coalinga	Standard Oil Co.		11	13	20S	14E
Kettleman North	K. N. D. A.		54	24	21S	16E
Newhall	J. E. O'Donnell	Hammon	1	8	3N	16W
Santa Fe Springs	Union Oil Co.	Bell	19	6	3S	11W
Long Beach	F. J. O'Donnell	Wilson	1	29	4S	12W
Montebello	V-8 Oil Co.	M. B.	1	2	2S	12W
Wilmington	Master Petroleum Corp.	Chuck	1	33	4S	13W
Huntington Beach	Brashears & Harrison, Ltd.	B & H	1	10	6S	11W
Torrance	Felix Mallon	Martner	1	23	4S	14W
	MacDonald and Burns	Moore	8	22	4S	14W
Ventura	Tide Water Assoc. Oil Co.	Lloyd	134	27	3N	23W
	Tide Water Assoc. Oil Co.	Lloyd	81	27	3N	23W
Elwood	Barnsdall Oil Co.		88-6	16	4N	29W
Midway	Tide Water Assoc. Oil Co.		7	22	32S	23E
Rio Bravo	The Superior Oil Co.	Wagner	1	35	28S	25E
	The Superior Oil Co.	J. I. & V. L. Geisinger	1	35	28S	25E
Edison	Francis O'Reilly	Edison Seale	5–26	5	30S	29E
Kern River	Inspiration Oil Co., Inc.	Sturgeon	1	25	28S	27E
	C and O Oil Co.		51	31	28S	28E
Mt. Poso	The Texas Co.	Alta Vedder	12	4	27S	28E
		ABANDON				
Long Beach	A. S. Johnston Drilling Corp.		35	13	4S	13W
	Standard Dehydrating Co.	Delford	1	18	4S	12W
Torrance	Thos. W. Simmons	Dumas-Lewis	2	6	4S	14W
El Segundo	Union Oil Co.	El Segundo	3	18	3S	14W
Sespe	Topa Topa Oil Co.		3	33	5N	19W
San Luis Obispo Co.	Trustees Well		1	25	32S	14E
Tulare County	The Caminol Co., Ltd.	Amalgamated	1–9	29	24S	24E
Mt. Poso	Tarr & McComb Oil Co., Ltd.	Stockton	1	26	26S	28E
Torrance	Imperial Gypsum & Oil Corp.	Pothoff	1	23	4S	14W
Playa Del Rey	The Ohio Oil Co.	Recreation Gun Club	2	21	2S	15W
Greeley	The Superior Oil Co.	Krause	1	21	29S	26E
Coalinga	Shell Oil Co.	Coast Range	21	17	19S	15E

Summary	This Week	Previous Week	To Date This Year	To Date Last Year
Total New Wells.....	14	17	995	1373
Total Deepened or Redrilled.....	18	9	674	587
Total Abandoned.....	4	8	430	442



With an average capacity of approximately 650 gallons of drilling fluid per minute, the McNeely Vibrating Mud Screen will handle the output of the largest mud pumps. With a high frequency, elliptical vibrating motion, a uniform intensity of vibration over the entire screening surface is insured. The screening surface is curved (an exclusive feature) which materially increases capacity. Vibrating frame and screen cloth are divided into two sections—thus only one-half the cloth need be replaced at one time. Completely unitized design assures fast and convenient installation or removal in the field.

For a dependable supply of clean, plastic drilling fluid at lowest cost, always use the McNeely Vibrating Mud Screen.

ASK FOR BULLETIN 101 WHICH ILLUSTRATES AND DESCRIBES SCREEN IN DETAIL

VERNON TOOL CO., LTD.
2740 EAST 37TH STREET, LOS ANGELES, CALIF.

Wall Scraper Solves Drilling Problems

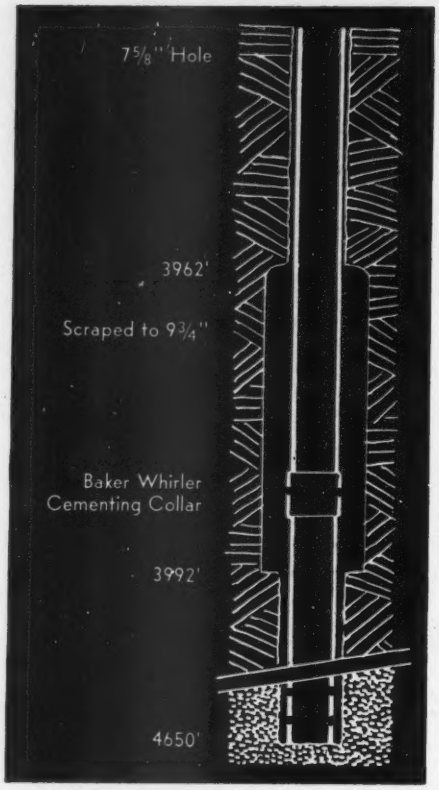
Important Applications Described

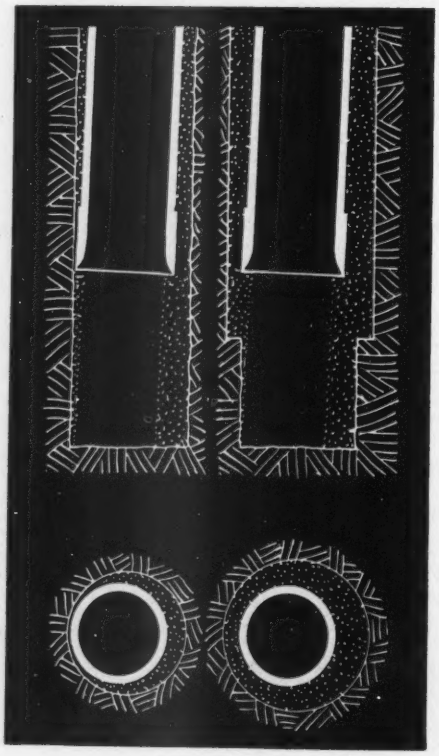
The modern oil operator, who is drilling to depths incredible a year ago, more than ever realizes the importance of making each well a permanent and profitable asset that requires the minimum hazard in completion and the smallest amount of subsequent upkeep. The following article will discuss the advantages given the operator by the use of the recently developed tool known as a Wall Scraper. In addition the oil operator should not hesitate to give the modern oil tool manufacturer a large share of the credit for doing his part in developing tools to meet the modern demand of more advanced drilling methods and practice. The oil tool manufacturers, designers, engineers and service personnel do everything possible to coordinate effective applications with efficient and safe operations.

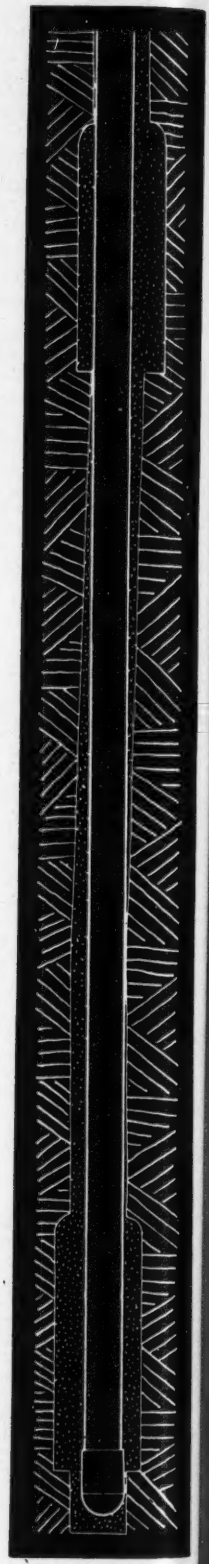
This article will not discuss the various wall scrapers or the mechanics of their individual operation or construction but will deal only with the various applications of the tool itself.

It is common knowledge that the mud sheath in a well is a hazard to the successful cementing of casing. The removal of the mud sheath in an oil well to insure a good bond for the cement and to prevent contamination when cementing a string of casing can be done effectively by wall scraping. Some operators prefer to scrape only to the face of the formation, while others feel that a distinct advantage is secured by cutting into formation for a distance of from a fraction on an inch to two or three inches. In any event, the mud should be cleaned off around and just above the shoe and the more formation taken off at this vital point the greater is the insurance that the pipe and shoe will be surrounded with cement as well as eliminating chances of not getting a good bond or of contaminating the cement with mud.

Going farther than the mere removal of mud is the general practice of many operators known as "bottlenecking", the enlargement of the original drilled hole to an appreciable extent at and above







Figures 1 below and figure 3. At right, Figure 2.

the shoe for a distance of from fifteen to one hundred feet, depending upon conditions. Two main objects of bottlenecking are the insurance of surrounding the casing completely with cement and the prevention of channelling at the most vital point: at and just above the shoe. No matter how much care is exercised in drilling a straight hole there will always be slight inclinations from the vertical. When the well has drifted slightly at the bottom, as is probable in the majority of cases, the condition (as illustrated in Fig. 1) the cement will be given a greater body around the pipe at the thinnest place than that would be possible in the smaller hole even if it were accurately centered.

The majority of California operators now claim emphatically that their wells never vary in excess of one degree from the vertical, unless intentionally deflected. This statement can be irrefutably proven by surveys. However, it must be realized that an inclination of only one degree at 7000 or 8000 feet will account for the condition illustrated in Fig. 2 when there is a close clearance between hole and casing.

Some operators guarantee themselves complete encasement of the casing by "bottlenecking" the hole at top and bottom, as shown in Fig. 2. Those using this method do the usual hole enlarging job at the shoe and then another ten or fifteen foot section is scraped at the estimated top level the cement is expected to reach. It can be said that this method is a needless precaution, but if water has been picked up above the point where it is deemed necessary to have the cement extend added assurance is secured that the upper water will not seep in behind the cemented portion of the pipe. Since the cementing of pipe is a reinforcement and protection in long casing string, this added insurance of the protection of the investment in time and money more than discounts the added time and expense necessary for scraping the hole at the upper interval.

In cementing a combination string through openings in casing or liner at a point above which the pipe serves as a water string and below which it functions as an oil string or liner, contact with the well of the hole is a very likely occurrence at or just above this point. It has, therefore, become standard practice with many operators to scrape the hole for a distance of from 20 to 50 feet at the cementing opening no matter what method of cementing is followed, such as illustrated in Fig. 3. Often used as a Whirler Collar for the discharge of cement at that point since the spiral motion given to the slurry by the Whirler Collar gives added assurance that the entire scraped area around the pipe is filled and that any hazard from channelling is reduced. A cementing basket may be used below the collar as a precaution against contaminating the productive zone below.

When a liner or casing cemented through a productive zone is to be gun perforated, the cement to be penetrated by bullets is no thicker than necessary. One of the objects of the cement, however, is to protect the zone completely and this method is most widely used when fluids other than oil are known or suspected of being too close to the producing stratum or strata to be shut off easily by other means. A method used with satisfactory results in California may be given as a solution to this problem. Fig. 4. In this well there were water strata very close to the oil sand above and below. Before running the oil string, therefore, the 9⅝-in. hole was scraped to 13 inches for a distance of six feet above and for eight feet below the place where the 7-in. casing was to be gun perforated.

Loss of Production

That a hard sheath impervious, or nearly so, to oil, left in the hole by the drilling mud may cause oil wells to fall far below the expectations provided by cores, is too well recognized to call for much discussion here. The complete removal of mud sheath from the face of the productive formation is assured when the mud plaster is actually cut away by mean of wall scraping. The method followed by one company when completing its wells in one field in the Los Angeles Basin provides for the use of oil when scraping an upper low pressure sand but for light mud when scraping a higher pressure zone below.

A principle accepted by many petroleum technologists is that the diameter of a well through the oil producing formation has an important influence on its rate of production. This does not mean that a fractional increase in the diameter of the hole will have an appreciable effect on the rate of production, but that when a bore is enlarged to two or three times its original diameter a definite increase in production can be expected. Other advantages of the greatly enlarged hole are higher ultimate recovery and lower gas/oil ratio, many engineers believe. By means of gravel packing the enlarged hole around the liner, protection is given to the large diameter wall scraped area.

The use of the wall scraper for straightening crooked holes is fairly well known in California. In a typical job (Fig. 5) which did not require the use of cement, 80 feet of the 8½-in. hole that was off 4 degrees could be straight reamed to 12¼-in. After this was done the 12¼-in. hole was scraped to 19 inches. New hole was then drilled from the shoulder formed by the scraper and started at about one degree off vertical. In another well, the 9⅞-in. hole was scraped to 19 inches for some distance

(Continued on Page 17)

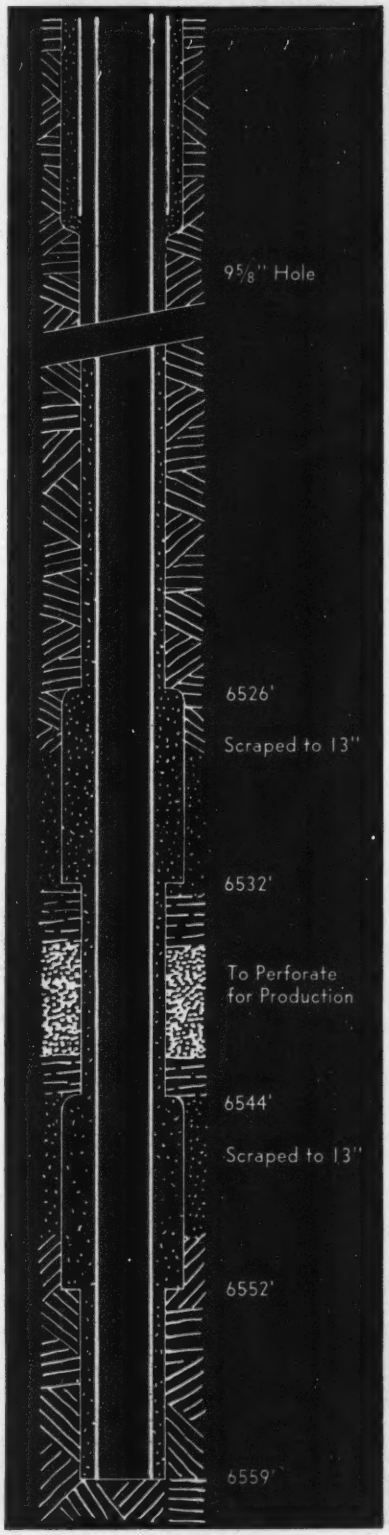


Figure 4.

Symposium of Recent California Discoveries

Features Rock Hounds' L. A. Sessions

An informal symposium of recent petroleum discoveries in California featured the two-day sessions of the American Association of Petroleum Geologists, Pacific Section, Nov. 3 and 4, in Los Angeles. Several of the meetings were held jointly with the Pacific Section of the Society of Paleontologists and Mineralogists.

The symposium was composed of extemporaneous papers on areas of current interest and were not intended for final publication at time of delivery. Discussion was invited but deference was urged on the ground that insufficient information is available on many of the subjects for final conclusions to be reached. Papers and authors were: "Newhall-Potrero Oil Field," by Richard W. Sherman; "Rio Bravo Oil Field," by E. B. Noble;" "A Possible Structural Interpretation of the Area of New Development at Rosecrans," by Jan Law; "Northwestern Extension of the Long Beach Oil Field," by Robin Willis; "New Development at the Potrero Oil Field," by the same author; "West Montebello Oil Field," by F. M. Ziegler; "Eastern Extension of the Wilmington Oil Field," by E. J. Bartosh; "East Side Coalinga Extension," by L. S. Chambers; "Canal Oil Field," by Clayton Stevens and T. K. Bowles, and "New Development in the Southeastern Extension of the Torrance Oil Field," by R. G. Reese.

Stanley G. Wissler, in "Notes on the Stratigraphy of Some Los Angles Basin Oil Fields," presented generalized columnar sections of the Pico, Repetto and Modelo for several fields along the Playa del Rey-Torrance the Inglewood-Newport, and the Santa Fe-Richfield lines of uplift. The lithology of a portion of the Repetto was shown in detail together with field to field correlations of the various oil zones.

Olaf P. Jenkins discussed the "Progress of the Geologic Branch of the State Division of Mines". Dr. Jenkins said that the Geologic Branch has made progress in compiling data for the new bulletin, "Geologic Formations and Economic Development of the California Oil and Gas Fields," as well as in editing articles prepared and contributed especially for the book. A state map to accompany this bulletin, a cross-indexed bibliography, and a glossary of names of drilled areas, are nearly complete.

Howard C. Pyle presented some results of core testing investigations made by himself and others of Union Oil Co. A summary of this paper appears in this issue in connection with the Los Angeles meeting of the Pacific Section of the American Institute of Mining and Metallurgical Engineers.

H. D. Hobson discussed "The Nature and Extent of Movement Along the San Cayetano Fault, Ventura County, Calif.". Data, he said, from wells recently drilled near the town of Fillmore in Ventura County have shown the flat hade of the San Cayetano Fault to persist laterally for a surprisingly long distance.

C. E. Leach and J. C. May, in their paper entitled "Notes on the Santa Susana Thrust Fault, Los Angeles County," said that the Santa Susana thrust fault is located on the north front of the San Fernando Valley, and that a recent well has given data on the nature of this major structural feature. Hubert G. Schenck discussed "Stratigraphy of Northern Iran".

Francis P. Shepard in his paper, "Structural Tends Off the California Coast," said that the sea bottom off the California Coast shows a series of steep escarpments with a dominant trend in a north-northwesterly direction. The continental slope escarpment follows this direction and is not influenced by the large change in trend found on shore at Point Conception. Many of the submarine escarpments show offsets with the northerly portions set to the north-

Petroleum geologists were anxious to obtain pre-publication maps, the cameras indicate.

east. Also, Mr. Shepard said, a number of the escarpments show slope reversals along their length. Directly outside the continental slope there are a series of oval mountains with trends in a north-northeasterly direction. These are probably volcanoes and from their trends suggest possible tensional phenomena.

John H. Maxon, discussing the "Miocene-Pliocene Boundary," said that in

Petroleum geologists talk it over.

California where marine and non-marine formations are intercalated, discrepancy in correlations has sometimes appeared, the vertebrate determination being higher than the invertebrate. The divergence, he said, is accentuated in the middle Tertiary by some vertebrate Paleontologists who arbitrarily state that the appearance of the horse genue Hipparion introduced the Pliocene. Application of this criterion, he said, would place the Puente, Mint Canyon and Modelo in the Pliocene. Mr. Maxon places these formations in the upper Miocene not only on the basis of invertebrate stratigraphy but also because of morphologic and time relationships of Hipparions in Europe, Asia, and North America.

Mason L. Hill and M. L. Natland, in their paper, "An Exposure of the Red Mountain Fault, Ventura County," said that one and a half to six inches of gouge sharply separates Pliocene formations which are eleven thousand three hundred feet apart in a normal stratigraphic section.

Robert S. Dietz and K. O. Emery, discussing "Phosphorite on the Sea Floor Off Southern California," said that dredging operations on the Scripps Institution vessel during the past year have shown that phosphorite is extensively developed on the sea floor off Southern California. This deposit, the authors said, is found as large nodules or as a coating on other rocks.

R. A. Stirton presented a paper on the "Significance of Tertiary Mammalian Faunas in Holarctic Correlation". The introduction was by B. L. Clark. The following is an abstract of this interesting presentation:

"The epochs of a period in the Tertiary time scale are, supposedly, convenient terms of expression, and as such, have been altered somewhat from the

They studied Wasco discovery rocks.

original designations of Lyell by different authors. Many controversies have arisen in the arbitrary assignment of boundaries to these divisions. This article is concerned with Mio-Pliocene boundary, particularly in California.

"From a study of certain living mammals, it is recognized that similar fossil forms realized a wide and rapid dispersal without appreciable evolutionary change and are useful in Holarctic correlation. Furthermore, the evidence shows that different plant associations were not effective barriers to these mammals. Hence it is again suggested that the equid genus Hipparion be accepted as an indicator of the beginning of the Pliocene.

"The late Tertiary time scale now in use on the Pacific Coast is based, primarily, on the early identifications of fossil vertebrates from the Coalinga area in California and in part to the percentage methods as applied to the invertebrates. The horse teeth, Neohipparion molle Merriam, from the Jacalitos which were used to mark the beginning of Pliocene time on the Pacific Coast, we now find to be very close in structural characters to Middle Pliocene forms elsewhere in America. From the evidence now available and in accordance with the above principles in intercontinental correlation, it is suggested that Pliocene time in California began with the Orinda, Lower Chanac, Upper Nerola and their equivalents."

New Fields Suspends Bolsa Chica Wildcat

New Fields Oil Co., latest operator to prospect for oil in the Bolsa Chica area between Huntington Beach and Seal Beach, has suspended operations temporarily at 4200 ft. Located at the intersection of Smeltzer and Bolsa Chica roads, the well is approximately a mile north of the Bolsa Chica Gun Club.

Burch Abandons His Cuyama Test

I. L. Burch, veteran Cuyama valley operator, has just abandoned his well No. 3 in that area. Located in sec. 4,10-26, nothing in the way of encouragement was found to the final depth of 1438 ft.

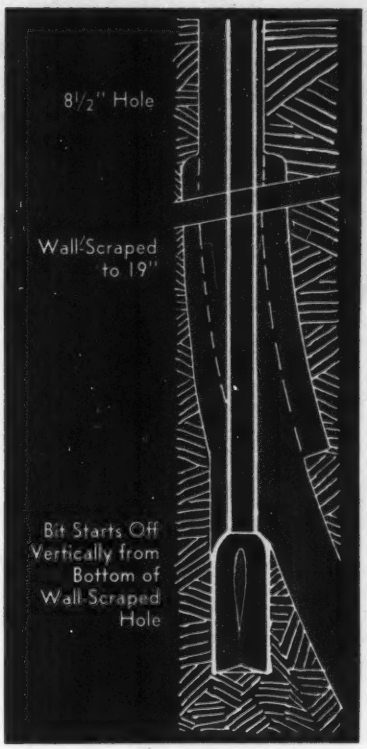


Figure 5.

(Continued from Page 15)

down from just above the place where th hole started to go crooked. The scraper was run carefully and slowly until a good shoulder was cut and this required about 50 feet of scraping. A cement plug was then pumped into the enlarged hole to extend up to the depth where deviation started. By using the 9⅞-in. bit and drilling carefully, the hole was soon straightened up so that normal drilling could be continued.

In sidetracking work and preparatory work for directional drilling, the wall scraper plays a highly important part. When using a knuckle joint for deviating the hole in the direction wanted, the angle from the vertical at which the hole is to be started is governed to a great extent by the size of the hole where the deflection is to be made. It is also desirable to have the flat bottom provided by the scraping tool, a special type in this case in which the blades extend slightly below the end of the tool body.

(In subsequent articles additional information on hole enlargements by the use of wall scrapers will be given.)

Continued interest in exports of petroleum and petroleum products from the United States to Japan has prompted the compiling, from records of the Bureau of Foreign and Domestic Commerce, of data to extend those shown in a statement issued in October by the San Francisco office of the Bureau of Mines.

Field Development

San Joaquin Valley

Richfield, Ohio Discover Buena Vista Lake Fields

Almost simultaneously two new valley floor oil fields were revealed by formation tests made in exploratory wells in the Buena Vista Lake district of Kern county.

Most sensational was the test made by Richfield Oil Corp. in its Tupman-Western No. 1 located in sec. 32, 30-25, which, trying the interval 8245 to 8498 ft., flowed gas at the rate of 7,000,000 cu. ft. together with a large amount of high gravity condensate. When pulled, the drill pipe was found to contain 160 ft. of 53 gravity condensation oil. In action very similar to Shell Oil Co.'s first wells in the Ten Section field, Tupman-Western No. 1 is believed to be in a "gas cap" overlying a black oil horizon. Estimates based on the formation test place potential production of the well when completed at 800 bbls. of oil and 20,000,000 cu. ft. of gas. The producing horizon has been identified as the Stevens zone.

Bottomed at 8523 ft., casing has been cemented near the 8400 ft. level for a production test. The discovery well is located near the north quarter corner of section 32 and is only a mile east of production in the old Elk Hills field.

A little over three miles southeast of the Richfield well, Ohio Oil Co. made an equally significant formation test in KCL No. F-1, located in sec. 10, 31-25. No gas cap was found in this well, the core barrel picking up well saturated oil sand streaked with shale at 9225 ft. which continued to bottom at 9365 ft. A drill stem test with the hole open from 9250 to 9280 ft. resulted in the recovery of nearly 1000 ft. of 39.8 gravity clean oil. Casing has been cemented at 9220 ft. and a liner is being run preparatory to completing the well.

The area in which KCL F-1 is located is referred to as Cole's Levee, a designation which may later be applied to the field when the well is completed. This is the fourth major discovery credited to Ohio, the others being the Venice-Playa del Rey field in 1929, the Buena Vista gas field in 1934, and the Canal field in 1937.

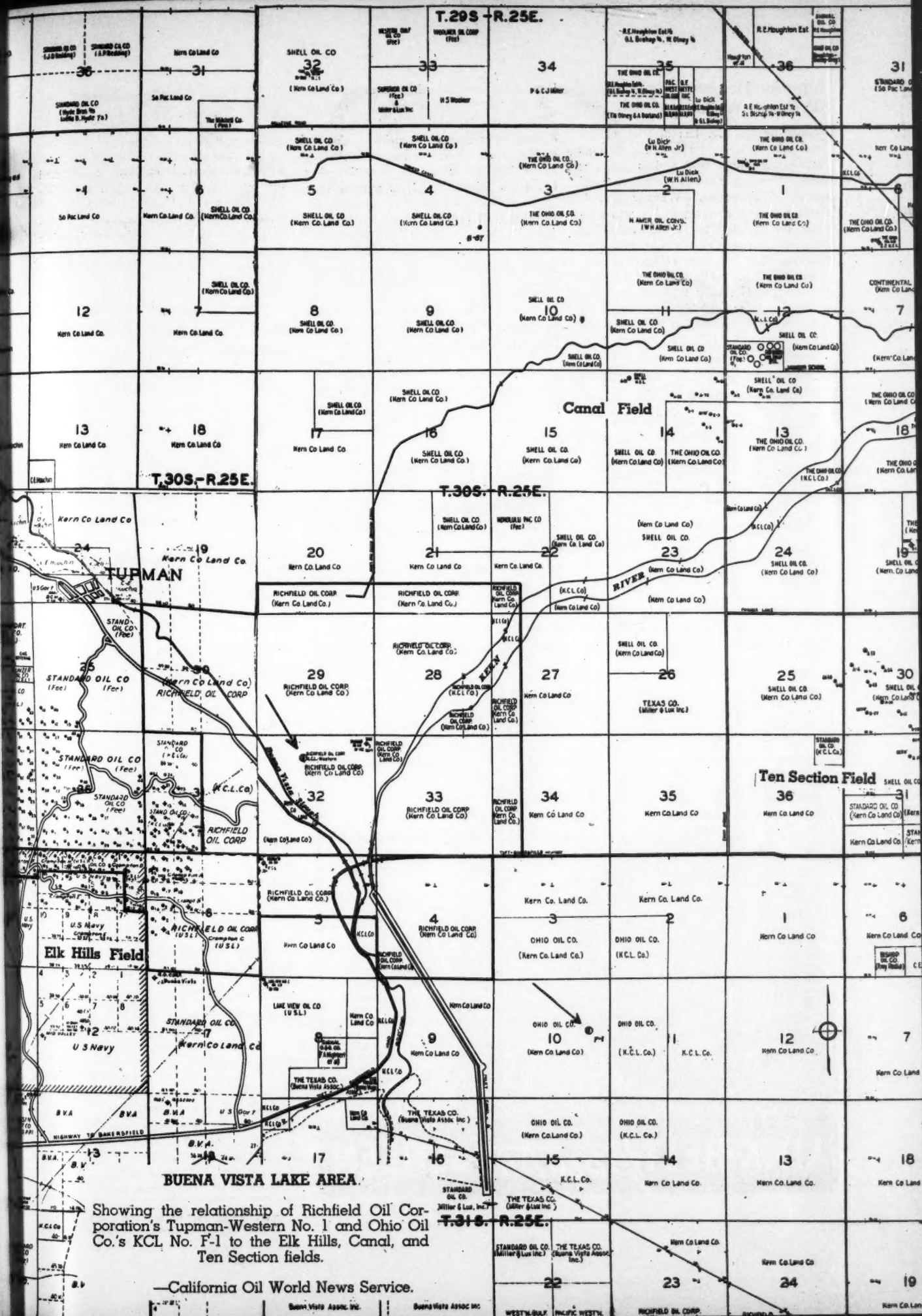
Wasco Well Flows 2700 Bbl. Rate on Formation Test

Flowing 2700 bbl. rate on a formation test, Standard Oil Co. Mushrush No. 1 became the second well in the super-deep field to yield commercial quantities of oil. The well is mechanically completed at 13,139 ft. with a 4¾-in. liner including 40 ft. of perforations, landed on bottom and cemented through holes at 13,075 ft. Tubing is being run preparatory to final completion.

Continental Oil Co. is attempting the world's deepest gun perforating job in KCL No. A-3-8, having plugged bottom from 13,644 ft. to the liner shoe at 13,211 ft.

SAN JOAQUIN VALLEY WILDCATS

Area	Well	No.	Section	Depth	Status
	Fresno County				
Coalinga	American Oil Fields, Inc.	1	16, 19-15	250	Drilling
	Jarvis, Leo P.	2	14, 20-14		Location
	Shell Oil Co., Coast Range	21	17, 19-15	2244	Abandoned
	Stuart Oil Co., Stuart	1	12, 21-14	700	Drilling
	Tide Water Assoc. Oil Co., Fleishacker	1	1, 19-15	7018	Drilling
Clovis	Central Valley Oil Co.	1	1, 12-20	608	Idle
Jacalitos Hills	Dauphin Dev., Ragan	1	30, 21-14	4100	Drilling
Mendota	Pierce, Cyrus, Shorb	1	16, 14-12	1020	Idle
	Kern County				
Belridge	General Pet. Corp., St. Helens	2	12, 28-20	1125	Drilling
Buena Vista	Ohio Oil Co., KCL	A-8	32, 31-26	11186	Idle
		F-1	10, 31-25	9365	Testing
Buttonwillow	Calif. Lands, Inc., Salisbury	1	7, 29-24	7075	Drilling
Canal	Shell Oil Co., KCL	B-87	4, 30-25	9100	Drilling
Devils Den	Gibson Oil Co., Alferitz	3	14, 25-18	1230	Idle
	Goodrum, Geo., Baron	1	24, 25-18	1210	Idle
Dominion	Master Pet. Co., U. S.	1	34, 26-28	825	Idle
	Pottenger, F. M., Villard	1	2, 26-28		Location
	Sierra Slope Oil Co.	1	25, 26-28		Location
Edison	Johnson, G. W.	B-P 1	33, 29-30	1345	Idle
Elk Hills	Renner & R.H.L. Oil Co.	1	27, 30-30	2030	Drilling
	Richfield Oil Corp.	KCL-W 1	32, 30-25	8510	Drilling
Famosa	Shell Oil Co.	KCL A-58-8	8, 27-26	7375	Drilling
Fruitvale	The Texas Co., C.W.L.	1	7, 29-27	10122	Redrilling
Grapevine	Petrol Corp., Reserve	33-5	33, 11-19	6830	Drilling
	Richfield Oil Corp.	KCL-1	28, 11-20	7950	Drilling
	Tidewater Assoc. O. Co.,S.P.	2	15, 11-19		Rigging up
Mt. Poso	Garner Bros. Oil Co., Garner	1	6, 27-29	765	Abandoned
Midway	Fried, Julius	1	34, 32-24	4550	Drilling
Poso Creek	Reynolds Oil Co.	1	20, 27-27	2855	Idle
Strand	Continental Oil Co.	E-1	17, 30-26	8575	Testing
Union Ave.	Richfield Oil Corp.,Union Ave.	1	6, 30-28	7600	Drilling
	Tulare County				
Terra Bella	Sheppard et al	3	35, 22-27	900	Drilling



BUENA VISTA LAKE AREA.

Showing the relationship of Richfield Oil Corporation's Tupman-Western No. 1 and Ohio Oil Co.'s KCL No. F-1 to the Elk Hills, Canal, and Ten Section fields.

—California Oil World News Service.

Superior Deepens Rio Bravo Wells

Superior Oil Co. has started a program of deepening its first completions in the Rio Bravo field and is carrying them down to produce from the full extent of the zone. Wagner No. 1, the company's first producer, was recently recompleted at 11,480 ft. flowing 2015 bbls. through an 18/64 in. bean and Geisinger No. 1 is now being deepened.

Kernco No. 2-34, Union Oil Co.'s jinx well, was finally finished at 11,465 ft. flowing over 4000 bbls. and No. 5-34 was placed on production as an equally good well.

Standard, Superior Complete Coalinga Eocene Wells

Standard Oil Co. and Superior Oil Co. each completed a typically large well in the prolific Coalinga Eocene Pool. Well No. 82-13C in sec. 13, 20-15 became Standard's first producer when, bottomed at 7112 ft., it was brought in with an initial flow of 6230 bbls. of 32 gravity oil. A total of 312 ft. of Gatchell sand was penetrated. The well is a southwesterly offset to the field's discovery well.

Coalinga Fee No. 1, second for Superior Oil Co., was bottomed at 7161 ft. and brought in under wraps flowing 1155 bbls. a day through a 15/64 in. orifice. Flow pressure was 1250 lbs. and gas measured 650,000 cu. ft. Water string is 9⅝ in. casing cemented at 6830 ft. and the location is in the southwest quarter of sec. 7, 20-16. Superior has moved equipment to an adjoining location and is drilling Coalinga Fee No. 2.

Following its policy of drilling only offsets, Petroleum Securities Co. is working two strings of tools. Well No. 88-7F, just across the line from Superior Oil Co.'s Hight No. 1, is approaching its final depth of 8000 ft. In sec. 18, Well No. 31-18F is coring at 6975 ft. after topping the oil sand at 6900 ft.

Only other drilling well in the field is Standard's 1-17F which is yet at shallow levels.

Franco Western 16 Pumps 245 Bbls.

Completing Well No. 16 pumping 245 bbls. daily, Franco Western Oil Co. created a small sensation in McKittrick oil circles. Located in the northwest corner of sec. 8, 30-22, the well is one of the best obtained in that portion of the field. With bottom plugged from 2516 to 2511 ft., and with 145 ft. open, production is 12.5 gravity and cuts 10% sand.

Mt. Poso Outpost Will Be Joint Test

Only active well in the entire Mount Poso area is the joint test now being started by Western Exploration Co. and Edco Petroleum Co. in sec. 32, 26-28. The well will be drilled southwest of the Ring Oil Co.'s producing properties. Western Exploration is headed by A. J. Bellport, Jr., and Edco Petroleum is an organization newly formed by E. D. Haugh and O. J. Meadows.

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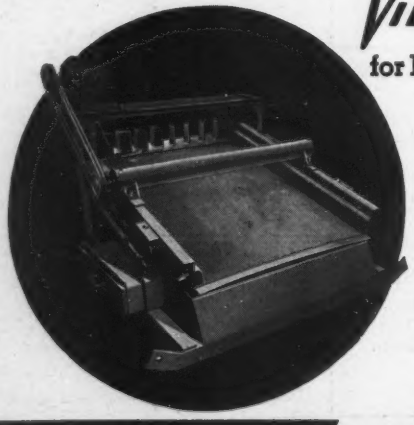

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LINK-BELT Vibrating SCREEN

G. P. Tries Shallow Zone in St. Helens No. 2

Endeavoring to obtain commercial production at shallow depths, General Petroleum Corp. is carefully coring and testing St. Helens No. 2 in sec. 12, 28-20. Water and a small quantity of oil were recovered while swabbing the interval 900 to 950 ft. and the well is being deepened. St. Helens No. 1, a deep test, plugged to 1400 ft., is said to be pumping 20 bbls. a day.

New Canal Test Cores Oil Sand

KCL No. B-87, Shell Oil Co.'s exploratory well located nearly three miles northwest of the Canal field, appeared for a time to be a winner, but thin stringers of oil sand cored at 8975 ft. quickly graded into gray sand, in which hole is now being made below 9300 ft. The well may be seen in sec. 4, 30-25 on the map published in this issue.

Abandonments Take Valley Toll

Abandonments lately have taken a heavy toll of valley wildcats. California Lands, Inc. junked Occidental No. 1, located west of Lost Hills, after drilling to 7343 ft. Oil showings were encountered in the Temblor zones from 5900 to 6074 ft.

Continental Oil Co., Seaboard-Associated KCL C-1 was abandoned at 13,064 ft. with a fish in the hole. Tests of several horizons recovered only salt water.

Superior Oil Co.'s Krause No. 1, Greeley outpost, was given back to the indians at 12,504 ft. after finding the Vedder zone barren at 11,500 ft.

Final abandonment of Ohio Oil Co. Willard No. 1, wild well near Willows, was accomplished by drilling another well and filling the old hole with cement.

Fleishacker Drills Below 6200 Feet

Tide Water Associated's deep test of the north Coalinga area, Fleishacker No. 57-1, is reported to be drilling below 6250 ft. No information regarding formations has been released on this well.

East of the Oil City field, American Oilfields, Inc., has spudded its Investment No. 1 in sec. 16, 10-15.

At the west edge of the Coalinga West Side field, Leo F. Jarvis is preparing to drill in sec. 14, 20-14, while to the south in sec. 12, 21-14, Stuart Oil Co. is drilling its No. 1 well below 700 ft.

Midway Wildcat Draws Interest

Much interest has been aroused by the wildcat well being drilled by Julius Freid in sec. 34, 32-24, north of Maricopa. With all information being withheld by the operator, scouts are able only to guess at formations and depths. A recent drill pipe count is said to have indicated the hole to be a little below 4500 ft.

200 Bbls. for Grizzley Bear in Coffee Canyon Field

Grizzley Bear Oil Co. completed its first well in sec. 6, 28-29 at 1647 ft. pumping at the rate of 200 bbls. a day cutting 5%.

South of the Round Mountain field, Brown-Saffold Drilling Co. is drilling a second well on the Newberry lease in sec. 32, 28-29.

Two Tests Slated For Dominion Area

The Dominion area, always a popular field for wildcatting, is slated for two new tests. Dr. F. M. Pottenger of Los Angeles returns to the area with a new project, Villard No. 1, in sec. 2, 26-28, and a new organization called the Sierra Slope Oil Co. has chosen a location for Micheals No. 1 in sec. 25, 26-28.

Garner Brothers Oil Co., Garner No. 1, cored into decomposed granite at 735 ft. and abandoned at 765 ft. The test was drilled in sec. 6, 27-29, four miles east of the Mount Poso field.

Famosa Wildcat Finds Vedder Barren

Another east side valley floor wildcat joined the ranks of the very doubtful recently when Shell Oil Co.'s KCL No. A-58 in sec. 8, 27-26, near Famosa, found the Vedder zone gray and barren. Still drilling below 7465 ft., the well encountered the sand body near the 7400 ft. point. Unconfirmed rumors indicate the project may be taken down to basement rock.

Superior Extends Rio Vista Gas Field

Bottomed at 3883 ft. and with 7 in. casing cemented at 3819 ft., Superior Oil Co. Reclamation Board No. 1 came in flowing 35,000,000 cu. ft. of gas to extend the Rio Vista gas field yet farther to the southeast. The well is located on the Sacramento River levee in sec. 7, 3n-3e.

Richfield Deepens Wheeler Ridge Well

Richfield Oil Corp. is deepening KCL No. 1, deep test located at the edge of the Wheeler Ridge field. Though much apparently low grade oil sand was cored below 7700 ft., repeated formation tests ended in failure and showings to last reported depth of 8050 ft. were not good enough to warrant setting casing.

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Los Angeles Basin

Tidewater Discovers Great New Oil Field

Discovery of a great new oil field is credited to the Tide Water Associated Oil Co. on its recent completion of Porter No. 1 in Aliso Canyon approximately six miles west of San Fernando. Swabbed in Oct. 25, initial production was gauged at the rate of nearly 1100 bbls. a day, the oil being entirely free of water and testing 23.8 gravity. Gas production is relatively small, at no time running more than 200,000 cu. ft., a feature in common with the recently developed Coalinga Eocene pool.

Located in sec. 27,3-16 west of the old Newhall tunnel, the new field is an accumulation controlled by the Santa Susanna fault the surface trace of which passes near the discovery well and which was crossed at depth.

Encountering much poorly saturated oil sand below 1800 ft., two production tests were made which resulted in the recovery of very little fluid; oil or water. Below 4800 ft., however, richer sands were encountered and the hole was cored to 5393 ft., then plugged to 5365 ft. to eliminate danger of water from gray streaks near bottom. Due to a large fluid rise while testing, only a provisional o.k. was allowed on 6⅝-in. casing cemented at 4795 ft. and a 4½-in. drillable liner was landed at 5359 ft., all perforated below the water string shoe. three-inch tubing was run to 4658 ft. and the ensuing test is now history.

Interesting and perhaps significant is the circumstance that the Newhall area, first in California to produce commercially, has been the scene of the last two major discoveries south of the Tehachapi Mountains. One of the high lights of the year 1937 was the bringing in of the Newhall-Potrero field by Barnsdall Oil Co. on the Rancho San Francisco 10 miles northwest across the hills from the new Aliso Canyon field. Tide Water Associated's producer coupled with the fact that oil sands were encountered in old wells of Standard and Shell Oil Companies will undoubtedly result in further exploration work in the west end of the San Fernando Valley.

Richfield Spuds Dominguez Test

Richfield Oil Co. has spudded in its seismograph-located wildcat southeast of the Dominguez field. Situated east of the new Compton Creek channel and north of Del Amo Road, the well has been rigged up with equipment capable of going to great depths.

H. B. Well Pushes Rosecrans Limits S. W.

Extending deep O'Dea zone production to the southwest, H.B. Oil Co. completed its No. 1 well at the corner of Figueroa and Rosecrans flowing nearly 500 bbls. a day. With approximately 40 ft. of hole open below the shoe of the water string at 7635 ft. production tests 30 gravity and less than one per cent cut. Using a 26/64- in. bean, pressures are 400 lbs. on the tubing and 850 lbs. on the casing. Universal Consolidated Oil Co. is preparing to spud an offset, Trust No. 14.

Flowing initially at the rate of 1630 bbls., Union Oil Co. brought in Rosecrans No. 26 at the southwest corner of Broadway and Rosecrans. Curtailed with a 10/64-in. bean, the well flows 244 bbls. of 31.7 gravity clean oil under 1000 lbs. presure. 155 ft. of formation is open to bottom at 7700 ft.

Royalty Service Co., Gordon No. 2, outpost well at the west bend in Main St., is preparing to test after bottoming at 7783 ft. and cementing 8⅝-in. casing at 7645 ft.

In the south end of the field, Bankline Oil Co. Kirby No. 1 and F. E. Fairfield, Abel No. 1 are yet redrilling at comparatively shallow depths and Hydro-Carbon Products Co., under the direction of M. H. Soyster, is preparing to spud in.

Western Gulf Oil Co. claims to have had no showings to present bottom of 5500 ft. in Bagg No. 1, semi-wildcat located on Rosecrans Ave. east of the field.

Completions Add 2000 Bbls. in Torrance Extension

Adding approximately 2000 bbls. of flush production to the Torrance Extension total, eight new wells were finished by as many different companies. Most important were small outpost wells completed by Richfield Oil Corp. and Sierra Trading Co., both pumpers. Richfield's Spring No. 1 extended production southeast to the intersection of "Q" Street and Figueroa, while Sierra's Sierra-Spring No. 1 carried limits to the corner of Figueroa and Lomita Blvd.

Typical completions were obtained within the proved area by General Petroleum Corp., Ring Oil Co., Severns Drilling Co., A. N. Macrate, Century Oil Co., and Bandini Petroleum Co. Though initial rates ranged as high as 600 bbls. a day, decline in all wells was rapid. A recent count showed ten wells drilling, several of which are now preparing to complete.

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Athens	Petromon & Oil Corp.	1	7, 3-13		Rig
Bellflower	Clayton, Geo. L., Scott	1	32, 3-12	6897	Idle
Castaic	Royal Land Corp.	1	8, 4-17	1120	Drilling
Dominguez	Richfield Oil Corp.	1	2, 4-13	750	Drilling
La Mirada	DHB Oil Co., Heath	1	34, 3-11	6150	Idle
	John McKeon and Assoc. Carmenita	1	21, 3-11	8530	Drilling
Mojave	Mojave Pet. Co., Gorman	1	5, 8-18	312	Drilling
	Jennings	2	33, 5-14	150	Drilling
Newhall	Continental Oil Co., Newhall	1	20, 4-17	1350	Drilling
	Newhall Drlg. Asso., Needham	4	13, 3-16	3505	Cleaning out
	Palmluck Oil Co.	1	23, 3-16		Rig
Palmdale	Antelope Valley Pet.	1	17, 6-12	1900	Idle
Palos Verdes	Gene McLaren	1	27, 4-14	3992	Idle
	Rolling Hills Pet.	1	27, 4-14	5100	Cleaning out
Pico	British Am. O. P. Co.	1	12, 3-12	7000	Abandoned
San Fernando	Tide Water Assoc., Porter	1	27, 3-16	5393	Producing
Santa Monica	Texas Co., A-S	1	9, 2-15	5350	Drilling
San Pedro	Grady, R. T.	1	23, 5-14		Rigging up
	Hogan Pet. Co., Burkhard	2	6, 5-13		Foundation
Whittier	Langstaff, Geo. W., Iliff	1	8, 2-11	2250	Idle
	Orange County				
Bolsa Chica	New Fields Oil Co.	1	16, 5-11	4200	Idle
Costa Mesa	A. V. Oil & Gas Co.	1	16, 6-10	4751	Testing
	San Bernardino				
Chino	So. Counties Pet. & Drlg. Co.	1	26, 2-8	2300	Drilling
	San Diego Clunty				
Carlsbad	Dauphin Dev. Co.	1	16, 12-4	690	Drilling

7th Zone Promises W. Montebello Future

Promising a great future for the West Montebello field, Hathaway Oil Co. discovered a Seventh zone in Dore No. 1, most southwesterly well in the area. After topping the new oil sand body at 7040 ft. and coring ahead to 7181 ft., a formation test was made during which clean oil reached the surface in an hour and fifteen minutes. Casing set at 7037 ft. failed to shut off water on the first cementing and a second job is being tested. This well is important because it not only extended the field, but added immeasurable reserves to the already proven area.

Pongratz Petroleum Co. finished Martin No. 1 in the lower section of the Sixth zone flowing 375 bbls. of clean oil.

Two Sixth zone wells were completed by Standard Oil Co., Harvey No. 3 flowing 1110 bbls. from 6395 ft. and Kaufman Fee No. 1, 483 bbls. from 6465 feet on gas lift.

Three Wells Test Palos Verdes Area

With three projects working, Palos Verdes is now the most active wildcat area in the Los Angeles basin.

After abandoning Burkhard No. 1 in a fault at 2556 ft. and drilling four shallow core holes, Hogan Petroleum Co. is preparing to drill a second deep well, Burkhard No. 2. On the basis of information gathered from the other wells, the new test will be located about 1000 ft. northeast of the first.

Having received a string of casing from a major operator Rolling Hills Petroleum Co. is preparing to core ahead to approximately 5200 ft. and test for production below 5050 ft. The well is located on the Weston Ranch south of San Pedro-Redondo Road.

Located half a mile northwest of the corner of 25th St. and Western Ave. west of San Pedro, the R. T. Grady project is moving in equipment to drill.

Water Trouble In Newport Test

Failure to shut off water has seriously hampered A. V. Oil & Gas Co. in its attempts to test oil showings cored to present bottom at 4751 ft. Five-inch casing including 62 ft. of perforated on bottom has been cemented through perforations at 4685 ft. but production tests have all shown water with a trace of oil. The well is located at Costa Mesa near Newport.

Second Deep Test For Signal Hill

With De Soto Oil Co. coring below 9700 ft. in the Lovelady sector, G. G. Perry and Associates are rigging up for a deep test at the corner of 17th St. and Coronado Ave. in the southeastern portion of the field. A. A. (Al) Carrey, long identified with the field, will be in charge of the engineering on the new well.

In the northwest extension, Caminol Co., Ltd. is drilling Dominguez No. 2-10 below 6200 ft. The well is scheduled for completion in the deep zone discovered by Hilldon Oil Co.

On Cedar Ave. north of Wardlow Road, A. S. Johnston abandoned his well No. 35 after losing circulation in the fault and skidded the rig to the south where No. 36 is drilling below 3300 ft.

British American Pico 1 Abandoned at 7000 Feet

Pico No. 1, British American Oil Producing Co.'s wildcat well located on Whittier Blvd. east of Montebello, failed to uncover any promising sands and was abandoned at 7000 ft. Several formation tests made months ago near the 4000 ft. level showed a little gas but no oil.

Texaco Drilling Santa Fe Springs

Santa Fe Springs, where the only work of late has been plugging and abandoning, is to have its first drilling well since Union Oil Co.'s deep test, Bell No. 100, was put on production. The new well will be Baldwin No. 6 of The Texas Co. and is located north of the Four Corners.

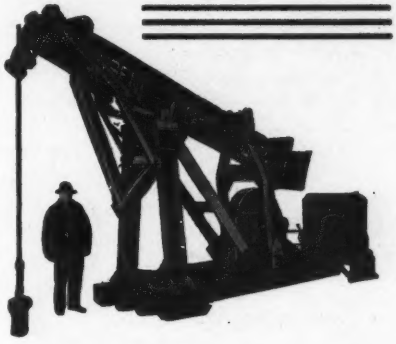
Wilmington Work at Routine Pace

With work continuing at a routine pace, little of unusual interest has occurred in the Wilmington field. Two wells were completed by Richfield Oil Corp. for a total of 450 bbls. while General Petroleum Corp., Union Pacific Railroad, and James Michelin each finished one. An even dozen projects are actively working and several operators are preparing to start new drilling or deepening operations.

It is understood that a compromise agreement is being accepted by the city of Long Beach and the Long Beach Dock and Terminal Co. which will enable Signal Oil & Gas Co. to proceed with its channel drilling proposal. Meanwhile the municipality is perfecting plans for the development of its tidelands.

Athens Area Gets New Wildcat Tests

Choosing a site on a golf course at the southwest corner of 120th and Main Streets, Herndon J. Norris is preparing to drill an important test of the area east of the north end of the Athens field. Some years ago a well was drilled on the property which is said to have yielded commercial quantities of gas. Mr. Norris, who is a permanent Los Angeles attorney, will drill the well under the Petromont Oil Corp. or W. E. Entrikin, trustee.



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Louisiana Flows 200 Bbls. at 236th & Eshelman

Flowing a settled 200 bbls., Louisiana Oil Co. completed the best well in the Eshelman sector of the Torrance field. Located on 236 St., the hole was bottomed at 5135 ft. where 5½-in. casing was cemented and gun perforated at intervals below 4810 ft. Initial flow registered 240 bbls. of 27 gravity oil cutting 2.0%

One block to the south, Sunny State Oil Co. finished Bateman No. 1 at 5192 ft. pumping 145 bbls.

First tests of the interval 3750-3860 ft. in the Blue Bell well on 241st St. near Pennsylvania Ave. indicated the zone to be barren of both oil and water. Further tests are being made.

At the west end of 236th St., J. E. P. Oil Co. completed Koala No. 1 at 4965 ft. flowing 350 bbls. of clean oil. On the Marble One lease Standard Oil Co. obtained 225 bbls. from No. 15. Total depth was 4980 ft.

Marcell to Drill In Carbon Canyon

Having erected a 96-ft. derrick, Geo. Marcell is installing butane rotary equipment to drill Schuh No. 1 for the Carbon Canyon Oil Co. The well is located near Carbon Canyon road in sec. 30,2-8, San Bernardino county.

Near Chino, Southern Counties Petroleum & Drilling Co. is reported to have attained a depth of 2300 ft.

McKeon Resumes Carmenita Wildcat

After three weeks of idleness following an unsuccessful production test, John McKeon and Associates have resumed drilling on their exploratory project at Carmenita west of Buena Park. Deepened from 8350 ft., late reports placed the bottom at 8500 ft.

D. H. B. Oil Co.'s wildcat in the same area is standing idle at 6150 ft.

Shell Adds 1268 Bbls. In Dominguez Field

Shell Oil Co. added 1268 bbls. of new production at Dominguez by the recompletion of two old wells. Reyes No. 35, deepened 75 ft. to 4230 ft. is flowing 670 bbls. of 30.3 gravity oil cutting 8.0% and Reyes No. 95, plugged from 9180 ft. to 7931 ft. and perforated between 7270 ft. and 7675 ft. is making 598 bbls, cutting 6.6%. Both wells are on gas lift. Union Oil Co. is completing Callender No. 63 at 7485 ft. and is working on three other wells.

Coastal District

Lloyd Features Ventura Avenue

Much interest and speculation has been aroused by the showings encountered in the easterly extension well of Lloyd Corp. at Ventura Avenue. Most observers agreed that to last reported depth of 7350 ft. enough good sand had been uncovered to assure a fair well. No production tests are contemplated at the present time, the company's plans calling for drilling to the maximum possible depth before a completion is attempted.

British American Oil Producing Co. has started its first well on the Bolsa Chica Oil Co. Hartman lease, and has chosen a location for its second. The wells will be known as No. 7 and No. 8.

Tide Water Associated Oil Co.'s McGonigal No. 11, deepest well in the field at 10,935 ft., has cleaned up satisfactorily and is flowing 1175 bbls. of 29.5 gravity oil with a water cut of 1.2%.

Loma Grande Oil Co. Deepens Edna Test

Resuming operations after testing shallow tar sands, Loma Grande Oil Co. is drilling Luis No. 1 at a depth estimated in excess of 2000 ft. Reports that the bottom is in the Franciscan could not be verified.

Tomson No. 3 Flows 860 Bbls. at Rincon

Recompleting Tomson No. 3 at Rincon, General Petroleum Corp. obtained an initial flow of 860 bbls. of clean 30 gravity oil. Now beaned back, the well is making 550 bbls. of oil and 555,000 cu. ft. of gas. Water string was cemented at 3897 ft. and a perforated liner was landed on bottom at 3988 ft.

Chanslor-Canfield Midway Oil Co. bottomed "B" No. 23 at 4092 ft. and with 72 ft. of hole open, completed flowing 375 bbls. cutting 2.5%.

Richfield Oil Corp.'s last completion, Hobson State F-5, is producing 50 bbls. of wet oil on gas lift.

Fox No. 1, Ridge Oil Co.'s outpost well, has been suspended at 7300 ft.

Tinaquaic Test Is in Hard Shale

Tinaquaic No. 1, Richfield Oil Corp.'s exploratory well in sec. 36,9-32, is finding the going very slow in a very hard shale formation below 1150 ft. The well is located in Foxen Canyon.

No showings have been reported in either of the two wells now drilling on the Rancho La Laguna. General Petroleum's test is below 3400 ft. while Continental Oil's La Laguna No. 2 is again coring ahead after recovering a fish lost at 3845 ft.

Mesa Well Makes Small Producer

Trans-Oceanic Oil Co., only active operator in the Santa Barbara Mesa field, is preparing to drill M'divani No. 2 after recently completing its first well with an initial estimated at 40 bbls. of 12.5 gravity clean oil. Drilled to 1950 ft., bottom was plugged to 1750 ft. where 7-in. casing was cemented and later gun perforated below 1695 ft. A late report gives the well a present production of 25 bbls. a day.

Barnsdall Pezzoni 1 Nears Completion

Pezzoni No. 1 Barnsdall Oil Co.'s sec. 15 test at Gato Ridge, has been bottomed at 4494 ft. in hard brown shale showing oil, and after setting a water string at approximately 1900 ft. will be placed on production.

Some difficulty has been experienced by Petrol's Magenheimer 5-11 in maintaining clean production. The hole has been replugged from 4714 to 4554 ft. and another production test is being made.

Halfmoon Bay Well Yields 54 Gravity Oil

With a yield of 30 bbls. of 54 gravity oil, Wilshire Oil Co. completed Cowell No. 2 at Halfmoon Bay in San Mateo county. After being shut in, a flow of 14 bbls. in five hours was recorded. On settled production, the well will probably be good for between 10 and 20 bbls. daily. Bottomed at 1605 ft., 6⅝-in. casing was landed at that point and cemented at 1380 ft., 25 ft. above the top of the perforations.

Fred Cole Is Only Santa Maria Driller

With R. R. Bush Oil Co. & Hancock Oil Co. Bradley Lands No. 4 now on production, Santa Maria Valley is left with only one drilling well; Fred E. Cole No. 18. Mr. Cole, drilling below 3000 ft., is seeking production on lot 5 of the Paderewski subdivision.

E. B. Kenny of Los Angeles has not yet spudded his projected well in sec. 27,10-34.

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Oakgrove 7 Small Wells In San Miguelito Field

Failing to flow, Chanslor-Canfield Midway's Oakgrove No. 7 in the San Miguelito field was completed on the pump for 145 bbls. of 28 gravity oil with a 15% cut. Hole is bottomed at 7171 ft.

Continental Oil Co. is preparing to drill Grubb No. 10 and C.C.M.O. Co. is rigging up Hobson A-6.

O'Donnell Tests Helen No. 1, Lompoc

Bottoming Helen No. 1, Lompoc extension well in sec. 8,7-33, at 4960 ft., J. E. O'Donnell is setting casing at an unknown point for a production test. Because of mechanical trouble, four runs of a formation tester ended in failure and the pipe is being set in an attempt to complete the well in the conventional manner.

Ventura County Wildcats Active

Many wildcats are active in Ventura county with the main objective of most small production at shallow depths. Because many of the structures are very steep and water is scarce, this is the last stronghold of cable tool drilling in California.

Production of crude oil in California for August was 20,770,000 bbls., averaging 670,000 bbls. daily.

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Colusa	Amerada Pet. Co.,Calif. Lands	1	34, 16-1	8060	Drilling
Glenn	Ohio Oil Co., Willard	2	18, 20-2	2253	Abandoned
Humboldt	Texas Co., Eureka	2	22, 3-1	7708	Redrilled 4864 Testing
Monterey	The Texas Co., Lewis	1	1, 19-5	4550	Drilling
	Anderson, A. A., Hillman	1	15, 24-14	4004	Idle
	Tannehill, L. B., Quinn	1	35, 20-8	1875	Drilling
Sacramento	Superior Oil Co., R. B.	1	7, 3-3	3883	Testing
San Mateo	Wilshire Oil Co., Cowell	2	20, 6-5	1605	Producing
Solano	Richfield Oil Corp., Potrero	1	10, 4-1	5334	Testing
Stanislaus	Orestimba Oil Co.	1	12, 7-7	790	Idle

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
Santa Barbara County					
Carreaga	Douglas-Stratton Oil Co.	1	8, 8-33	6240	C. O.
Foxen Canyon	Richfield Oil Corp., Tinaquaic	1	36, 9-32	1100	Drilling
Gaviota	Gaviota Oil Co., Hollister	1	35, 5-33	3215	Idle
Gato Ridge	Barnsdall Oil Co., Mag.	5	9, 8-32	3035	Idle
	Pezzoni	1	15, 8-32	4494	Drilling
Lompoc	O'Donnell, J. E., Helen	1	8, 7-33	4960	Testing
Los Olivos	Continental Oil Co., Laguna	2	25, 8-31	4250	Drilling
	General Pet. Corp., La Laguna	1	6, 7-30	3505	Drilling
Orcutt	Warren Deuel, Garrett	1	12, 9-34		Rig
San Luis Obispo County					
Cuyama	Burch, I. L.	3	4, 10-26	1438	Abandoned
Edna	Loma Grande Oil Co., Lewis	1	28, 31-13	1950	Drilling
Elk Horn	Calif. Pet. Prod. Co., Irons	1	19, 10-24	1710	Idle
	Lee, Harry Defiance	1	7, 32-22	225	Idle
	Western Plains Oil Co.	1	7, 31-21	4010	Idle
Huasna	Hancock O. Co.,Scherer-Dickes	1	30, 12-33	5593	Idle
Paso Robles	Vanguard Oil Co., Clark	1	26, 27-14	4950	Idle
	Epco, Inc.	1	27, 26-13	150	Drilling
Ventura County					
Ojai	High Mesa Oil Co.	1	16, 4-22	1750	Drilling
Red Mountain	Martin, J. W.	3	15, 4-21	1250	Idle
Sespe	Claran Oil Co., Hardison	1	22, 4-20	710	Drilling
	Commander Oil Co.	7-F	13, 4-19	575	Redrilling
	McKinnis, Chas., Cosley	1	14, 4-19	1090	Idle
	Merchants Pet., Cochran	8	1, 4-20	1365	Drilling
	Speik Oil Co.	1	33, 5-19	3440	Idle
	St. Louis Oil Co.	1	1, 4-20	1250	Drilling
Shiells Canyon	The Texas Co., Shiells	135	4, 3-19	4066	Testing
South Mt.	Clipper Oil Co.	1	17, 3-20		Rig
Tar Creek	Section 20 Oil Co.	1	20, 5-19	2300	Drilling
Timber Canyon	Stallings, Senter, Ahlberg	1	24, 4-21	1445	Idle
Ventura	Ventura Drilling Co.	1	10, 3-23	1550	Drilling

Lee Laird Appointed Chiksan Basin Agent

An announcement has just been made by Earl Atkins, sales manager of Chiksan Oil Tool Co. Ltd., of the appointment of Lee Laird as sales representative in Los Angeles City and Basin fields.

Lee Laird

Lee Laird has been appointed to this responsible position after four years with Chiksan Oil Tool Co. Ltd. and after eleven years of general experience with oil companies and manufacturing companies in the western oil industry.

Lee's many friends in the Los Angeles Basin will be very pleased to learn of this recognition by his company.

Earl Atkins also announces the appointment of Gordon McKee as representative for the company in the San Joaquin Valley fields.

"Practical Oil Geology" Enters Fifth Edition

Just off the presses of the McGraw-Hill Book Co. is the fifth edition of Dorsey Hager's "Practical Oil Geology." Long considered as a standard text for the practical oil man, the revised work has been thoroughly brought up to date and includes entire new chapters on geophysics and plaentology. Written in Mr. Hager's easy, non-technical style, and ably carrying on its twenty-three year old traditions of accuracy and completeness, "Practical Oil Geology" is a volume that should be in the library of everyone interested in the oil business.

G. E. Celebrates 60th Anniversary

General Electric's 60th year was fittingly observed Oct. 17 in Schenectady when the Chamber of Commerce presented the company with a bronze plaque, commemorating the steps leading to the formation of the company and its location in Schenectady. The plaque was presented by Laurence G. Magner, president of the Chamber of Commerce. It was accepted for the company by Gerard Swope, President.

Mr. Swope in accepting the plaque said in part: "We have had many great leaders of General Electric — Edison, Coffin, Rice, Steinmetz, Thomson—but this company doesn't depend on its leaders—it depends on the men and women who form this organization, and by co-ordinated, cooperative effort continue the magnificent structure that these 60 years have reared. But there's nothing final in these 60 years. That is one of the fine things that Mr. Edison did, because he founded this company not on the basis of profit alone, or bigness, plus points that your president has mentioned, but on research, that we should constantly strive to do something better tomorrow than we have done today. That spirit, actuating an organization such as this, will go far to keeping it young and alive. Sixty years young then is the thought that I want to leave with you, and 60 years of research which is only the beginning of further and more truths to be uncovered for greater success not only for the General Electric Co., but for our country as a whole, for the development of our industry, and for the well being of its people."

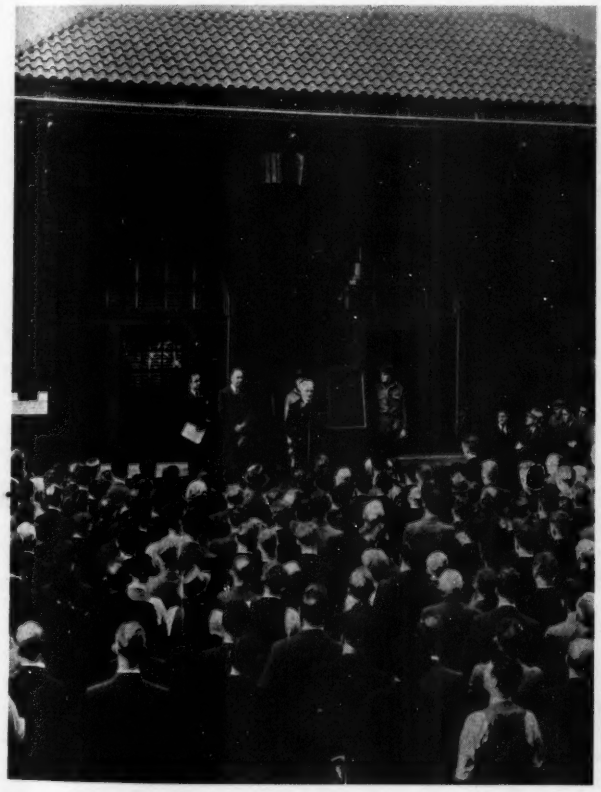
New Grating Eliminates Hazards

In Tank Farm and Plant

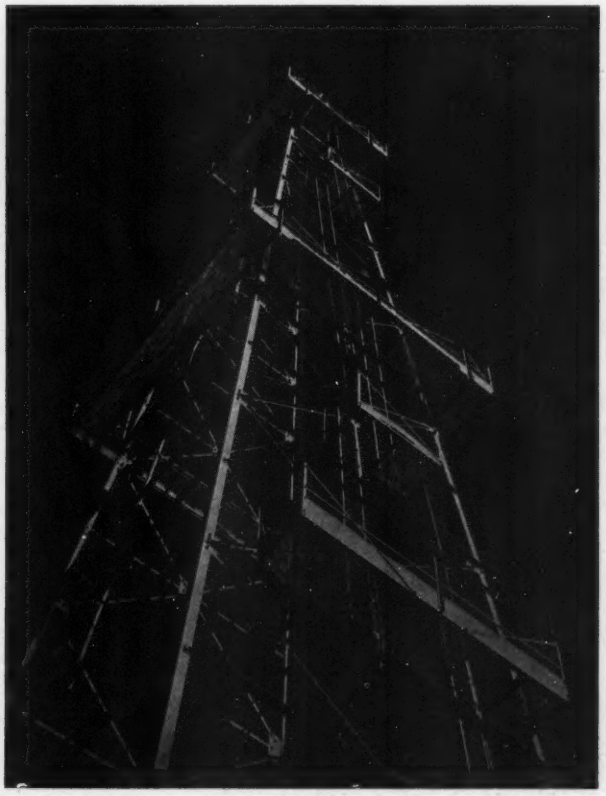
Another major contribution to safety and neatness in California's oil industry comes in the form of a fabricated sheet steel tread or grating for use on platforms, stairways, walkways, foot bridges, and on decks that may become slippery. This Superior Steel Grating, as the new metal tread is known, is constructed to give a sure footing, to eliminate tripping, and also to prevent accumulations of water, snow, dirt, oil and spillage. Not the least feature of the grating is the increase in strength accompanied by reduction in weight over similar constructions.

The engineers who designed the new fabricated sheet steel tread say that the Superior Grating will not allow tools to fall through the openings, thus protecting those below as well as those aloft. This feature will be appreciated by those who recall the occasion for those deep dents in their safety helmets, or days spent in the hospital because they forgot that important piece of safety equipment. It is hardly necessary to discuss at great length what a sure-footed walking or climbing surface means to drilling crews or refinery still tenders on rainy days or dew-heavy mornings.

Among the features stressed by the manufacturers, Superior Tank & Construction Co., 4735 East 52nd Drive, Los Angeles, are the following. The Superior Grating will not impede activity nor wear down to a smooth surface. Used in stairways, the **reversible** steps are made in one piece without welds or joints, with nothing to loosen or open up, and there are no protruding corners or sharp edges to trip those who descend. The design of the grating assures a positive grip on the sole of the shoe. All members of the Superior Stairways are proportioned for maximum strength, galvanized for long life, and assembled securely to eliminate vibration and sway.



President Gerard Swope at microphone, addressing group within main gate of the Schenectady plant of the G-E Company accepting Chamber of Commerce plaque commemorating 60th year.



Equipped with the new fabricated sheet steel tread this derrick is a good example of the modern trend to greater safety and neatness. The new grating has many applications.

They enhance the general well-kept appearance of any installation which they serve.

Double tank settings, the manufacturers continue, require the customary five-foot platform and one or two ring stairway. The platforms consist of one piece of Superior Grating with toe boards. They are supported by angles and surrounded by a 42-inch railing. The stairway attaches directly to the platform and the platform is secured between the two tanks so as to facilitate their dismantling and removal. Superior Steel Stairways, when combined with long aerial runways supported from tanks or by steel bents, enable attendants to perform their duties efficiently and quickly with a minimum of hazard. Each of these structures is made to fit the particular installation and to give accessibility to a succession of hatches that must frequently be visited.

Superior Tank & Construction Co. products include triple seal bolted tanks, tank manholes and hatches, tank bottoms and decks, tank flanges and fittings, cone bottom segregators, wash and scrubber tanks, Kerrick Kinetic heaters, tank coils and heaters, sump tanks and gates, welded tanks, gas traps and boots, gas collecting piping, stairs, platforms and runways, Hobi oil cleaners.

Equipment and men are available to give immediate sales, engineering and field service in all California fields.

Rolling merrily along with these hard hitting male kegglers of Tide Water Associated Oil Co., Associated Division, is Miss Mary Don Hawkins of San Francisco, whose year-round average of 157 won her a place on the company's team, which is competing in the second annual Petroleum Bowling Association season in San Francisco and Oakland. Members of the Associated bowling team are (left to right) Walter Saidak, Miss Hawkins, Henry Marzillius, Cliff Carroll and Les Graham.

California Crude Oil Production

Three Weeks Ended October 29, 1938

	October Daily Quota	Average Daily Production	Excess
San Joaquin Valley			
Belridge—North	14,495	12,673	*1,822
Belridge—South	1,895	1,021	*874
Buena Vista	17,105	17,033	*72
Canal	3,355	3,560	205
Coalinga-East (Eocene)	1,173	1,031	*142
Coalinga—East-West	15,972	7,591	*8,381
Coffee Canyon	2,960	3,209	249
Edison	2,495	2,609	114
Elk Hills	7,845	10,417	2,572
Fruitvale	7,195	7,681	486
Greeley	3,135	1,711	*1,424
Kern Front	7,975	7,330	*645
Kern River	5,530	2,864	*2,666
Kettleman No. Dome	60,490	61,926	1,436
Lost Hills	4,285	3,283	*1,002
McKittrick	3,430	3,213	*217
Midway	42,964	43,749	785
Mount Poso	14,060	14,973	913
Mountain View	8,920	9,477	557
Rio Bravo	4,810	7,535	2,725
Round Mountain	9,625	10,047	422
Ten Section	8,515	8,619	104
Wasco	373	399	26
Other Fields	2,177	2,328	151
TOTAL	250,779	244,279	*6,500
Coastal Counties			
Elwood	5,045	5,167	122
Rincon	2,845	3,439	594
Santa Maria	5,940	3,126	*2,814
Gato Ridge	2,495	3,544	1,049
Santa Maria Valley	19,590	12,715	*6,875
Santa Paula-Newhall	4,930	5,390	460
Ventura Avenue	31,790	34,269	2,479
Other Fields	5,965	6,772	807
TOTAL	78,600	74,422	*4,178
Los Angeles Basin			
Alamitos-Seal Beach	7,655	8,176	521
Brea-Olinda	8,395	5,651	*2,744
Coyote—East	2,665	3,153	488
Coyote—West	7,990	7,842	*148
Domingues	20,220	26,308	6,088
El Segundo	5,015	6,139	1,124
Huntington Beach—New and Old	26,425	32,443	6,018
Inglewood	13,520	17,313	3,793
Long Beach	43,645	54,540	10,895
Montebello	6,297	6,554	257
Montebello-West End	3,113	8,605	5,492
Playa del Rey	5,210	5,858	648
Richfield	7,800	7,944	144
Rosecrans-Athens	8,000	14,318	6,318
Santa Fe Springs	28,795	30,995	2,200
Torrance	14,380	19,460	5,080
Wilmington	69,120	94,309	25,189
Other Fields	2,590	2,917	327
TOTAL	280,835	352,522	71,690
STATE TOTAL	610,214	671,226	61,012

*—Shortage.

Baroid Carrying Case For Well Building Tester

A compact, sturdy carrying case has been designed by the Baroid Sales Department. It enables the mud engineer to carry his Baroid Wall-Building Tester from well to well.

The comparatively recent introduction by the Baroid Sales Department of this 100-lb. Pressure Wall-Building Tester gave the oil industry the first accurate check on the drilling mud—**right at the well.** The operation of the Tester involves the compressing of the mud to be tested against a permeable filter pad or paper thus producing essentially the same results as those produced by the pressure of the mud column against the walls of the hole. By this method it is possible to determine the thickness of the cakes formed on the walls of the hole by the various muds.

It has been found that the thicker the cake and the higher the water loss of that cake the greater is the danger of caving, tight hole, and stuck drill pipe. Cake thickness and water loss are influenced by sand content, salt content, gel-strength, viscosity, weight, and percentage of solids. Therefore, the wall-building test simplifies mud analysis by providing an over-all evaluation of the mud. The result is a composite of all

the variables affecting the mud and gives an indication of its actual performance in the hole.

These facts have become recognized by men in charge of mud control; which has resulted in the widespread use of the Baroid Wall-Building Tester. To many of these men the Tester has become an indispensable part of their equipment. This has prompted the Baroid Sales Department to make available a specially designed carrying case for the Wall-Building Tester. The Tester and all necessary accessories are compactly arranged in the case so that it can be easily placed in a car and taken from well to well.

The case is designed for utmost portability and is built to withstand tough usage. The interior is divided into fitted compartments for holding all the equipment securely in place and to expedite packing. The overall dimensions of the kit are: Length 24¾"; width 15"; and depth 8". With complete equipment it weighs 42 pounds.

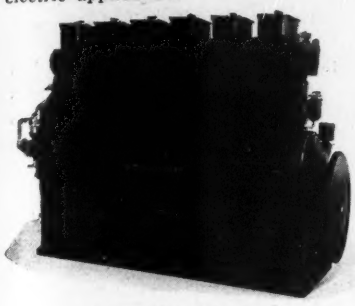
The equipment includes the Wall-Building Tester using 100 pounds air pressure; 1800-lb. capacity Air Cylinder; Air Gauges with bleed-off valve; Connecting Hose; 100 cc. and 25 cc. Graduates; package of 100 Filter Papers; and a crescent wrench for assembling the equipment.

Instructions on the use of the Wall-Building Tester and prices on the Tester and Carrying Case are available by writing to the Baroid Sales Department, 837 Jackson Street, Los Angeles.

Although increasing 24.3 % over September 1937, the movement of petroleum products by motor carrier in September 1938 was 1.4 % under the August 1938 total, according to American Trucking Association, Inc.

Ingersoll-Rand Issues New Diesel Catalogue

A new forty page bulletin on Type "S" Diesel Engines has just been published by Ingersoll-Rand. This machine is a heavy-duty, continuous-service, compact engine for stationary or marine-electric application.



Ingersoll-Rand
Type "S" Diesel Engine

It is a four-cycle, single-acting, solid-injection engine of the modern enclosed type having complete force-feed lubrication, wet liners, shell bearings, and many other refinements. Of particular interest is the low fuel consumption of 0.38 lbs. per BHP Hr. at full load. The fuel injection system has an individual fuel pump for each cylinder and there are two single-acting non-clogging nozzles per cylinder.

The Type "S" Engine is built in sizes of 3, 4, 5, 6, 7, and 8 cylinders, and rated at 175, 230, 290, 350, 405 and 460 BHP. respectively for 600 revolutions per minute.

The bulletin contains many illustrations of the engine parts, explaining the relationship of their design to the economical installation and operation characteristics of the unit. Several pages are devoted to application views on a variety of services in various parts of the world. In addition, specifications, dimensions, cut-away views and other information are contained in the catalog, form 10110, copies of which are obtainable from the Ingersoll-Rand Company, 11 Broadway, New York City, or any of their branch offices.

Fisher Governor Issues Instructive Catalogue

An attractive and colorful new catalogue, describing in detail pump governors, regulators, liquid level controllers, valves, traps, strainers, manufactured by the Fisher Governor Co. of Marshalltown, Iowa, is just off the press.

This new catalogue is divided into 12 sections, and contains 16 pages of the well known Fisher capacity charts so useful in sizing controllers properly for all fluids and all conditions. These new capacity charts are now more complete and easier to read than before. Their use insures more efficient control, and often makes it possible to use smaller valves.

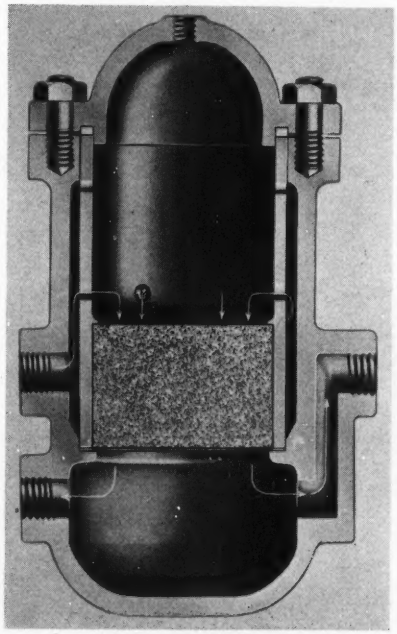
Fisher catalogue No. 35 describes and illustrates 183 different automatic controls and steam specialties. It contains more than 73 installation photographs and diagrams. Dimensions, working pressures and prices are given in complete detail.

Ring type binding allows the catalogue to be opened flat; makes it easier to use. Printing throughout the book is in green and black.

A copy of this new catalogue may be obtained by writing the Fisher Governor Co., Marshalltown, Iowa.

Fisher Governor Offers New Air, Gas Line Filters

New filters, designed to meet the increasing demand for a highly efficient filtering device in gas and air lines, have been developed by the Fisher Governor Co. of Marshalltown, Iowa. These new Fisher Types 360 and 361 filters remove foreign matter and separate free moisture from the air and gas pipe lines with a minimum friction loss. They



protect expensive air tools, machines, instruments and other devices against damage and costly service interruptions while guarding and improving the quality of the finished product, the manufacturers say.

Fisher filters utilize extremely hard aluminum oxide crystals bonded together as a filter element. This especially manufactured filter element is both acid and heat resisting, and unusually strong. Gases pass through this porous filter with only slight loss due to friction.

The filters may be installed in either vertical or horizontal pipe lines with standard pipe fittings. They are unusually compact. Their advanced design separates free moisture before gases pass through the element. This reduces the load, and results in longer service life and less frequent cleaning. Suitable drain cocks are furnished. Flanged and bolted bottom castings permit easy, quick removal for cleaning.

The filter body is constructed of high-tensile iron, designed to give full capacity. These filters with screwed connections are available in sizes ¼-in. to 1¼-in. inclusive, and with flanged connections from 1½-in. to 2-in.

Complete information about these filters is contained in Fisher Catalog I. A copy may be obtained upon request by writing the Fisher Governor Co., Marshalltown, Iowa.

Seam Testing Service for Leaks in Tank Bottoms, Decks

A newly developed, accurate seam testing service has just been inaugurated by the American Pipe & Steel Corporation. It is a vacuum method that can be adapted to locating leaks in the bottoms and decks of tanks; ship decks and hulls; pipe lines; and involves a minimum of time and expense, as compared to methods of a more complex and less effective nature.

The patented device used in the American Seam Testing Service is an air-tight, rectangular-shaped box, equipped with a vacuum gauge. The top of the box is covered with glass and soft rubber strips are mounted around the base.

When tests are to be made, a section of the seam is covered with a thick solution of soap suds. The device is placed over the covered area and a strong vacuum is created by means of a suction pump. The tremendous suction compresses the soft rubber base of the device so that air is sealed out. Any imperfections in the seam within the area covered by the tester will permit the inflow of air, which in turn will cause large clusters of soap bubbles to appear at that particular point. Detected through the glass top of the seam tester, these bubbles instantly indicate the presence of a leak, no matter how small it may be.

Inspection of any tank can be made in from one to two hours, or while alternating service. There is no need for costly delays. In the event that new tanks are being erected, caulkers and welders are able to work at a much greater speed, knowing that pin holes

will be quickly detected and adjusted. Too, bottoms may be laid in a permanent position without risk of causing fractures, as is often the case when they are set up on horses and then lowered into position.

Thousands of dollars that are lost by slow, undetected leakage in tanks can be saved by such a thorough method as this. Practical, efficient, American Seam Testing is an advanced note in effecting the economies in which all operators are interested.

Axelson Issues Sucker Rod Book

A new brochure on sucker rods, entitled, Not How Much But How Well, was recently published by the Axelson Manufacturing Co. of Los Angeles and St. Louis. This new book is bound in the new spiral flat binding.

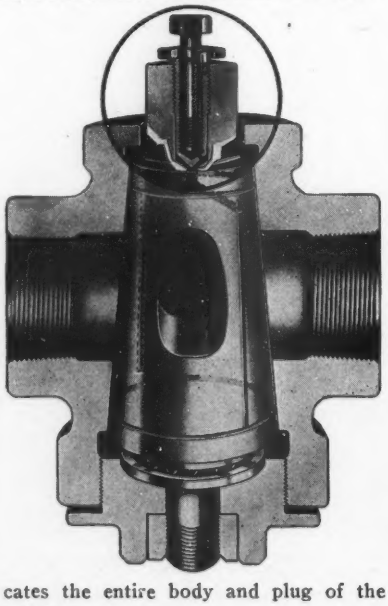
Dealing particularly with the materials and processes that go into the manufacture of sucker rods, it describes from start to finish the composition, tests, and qualities desired for different drilling conditions. Stress is placed on the fact that sucker rods are a precision made piece of machinery and must therefore be treated as such in storing, transportation and use.

Copies of this booklet may be obtained by writing any of the main offices of this company.

New Mechanical Device For Plug Valve Lubrication

A new device which, it is claimed, eliminates all gas or fluid leakage during plug valve lubrication has recently been announced by MacClatchie Manufacturing Co., Compton, Calif. This MacClatchie feature, known as "Lubricheck," is standard equipment on all new MacClatchie "Hydro-Seal" Plug Valves. It is especially designed to give longer wearing life to the valve through positive lubricating action and simple operation, and to eliminate the danger of regreasing plug valves under pressure, it is said.

"Lubricheck" consists essentially of a tapered seal which seats against the opening of the lubricating chamber and closes off all gas or fluid while the lubricating screw is removed. The tapered seal is equipped with left-hand threads on its outer surface, and less than a quarter turn tightens the seal against the seat. As the right-hand Lube Screw, located inside the seal, is removed, the friction obtained serves to further tighten the seal against the seat, thus making possible a fluid-tight seal under extremely high operating pressures. To lubricate, a MacClatchie Grease Stick is inserted, the Lube Screw replaced and tightened. Turning to the right automatically loosens the seal of the "Lubricheck" and opens the grease channels. Grease is then forced into the channels and lubricates the entire body and plug of the valve.



Simple construction of "Lubricheck" eliminates quick wearing parts which often do not thoroughly seal off the grease chamber and therefore allow line pressure to force the grease out of the valve when lubricating. No sand or mud can interfere with proper operation of the "Lubricheck," and quick easy adjustments, or complete removal, of the Lube Screw can be accomplished with no gas or fluid leakage, the manufacturers say.

The positive sealing action of the "Lubricheck" is a definite safety feature for refineries or gas plants where fire hazards must be eliminated. Spraying fluid and leaking gas are entirely eliminated, and a more thorough check-up for proper plug valve maintenance can be carried on with complete safety through the use of "Lubricheck."

MacClatchie "Hydro-Seal" Plug Valves, equipped with "Lubricheck," are available in many sizes for all field and pipeline operations, in screwed, flanged or union ends, and hand or gear operated.

Large New Laboratory To Further Baroid Study

The construction of a new laboratory building adjoining its general plant at 837 Jackson Street, Los Angeles affords the Baroid Sales Department the opportunity to further its research and development on drilling fluids.

The addition includes a research laboratory, a mechanical testing laboratory, a testing equipment display room and also houses various departmental offices, besides a mud sample room, duplicating room and photographic laboratory.

The research laboratory is complete in every detail for analytical and development work.

In the mechanical laboratory equipment so designed to stimulate actual conditions as closely as possible has been installed. Here all drilling muds are given the most exhaustive tests possible so that the mud engineer can be reasonably certain ahead of time what his mud will do.

Baroid testing equipment affords the mud engineer an accurate check on his drilling mud right at the well. This fact has gained widespread recognition and the consequent demand for the testing equipment reached the point where it has necessitated the construction of a special display and stock room. Here are Baroid Wall-Building Testers, Baroid Mud Testing Kits and Mud Testing Cabinets, viscosimeters, hydrometers, etc., all assembled and on display. A stock of all necessary equipment and parts are kept on hand for prompt filling of orders.

A suit to test the validity of a contract between the Los Angeles County Flood Control District and an oil company for the drilling of oil and gas along the west bank of the Los Angeles River in Long Beach will be filed in the Superior Court.

Copy of Huntington Beach Ordinance No. 418, which declares that an emergency exists; defines it, and regulates the application for and the drilling of oil wells within the city, may be inspected at the office of the California Oil and Gas Association.

Officers, District Managers and Department Heads attending District Managers Conference.

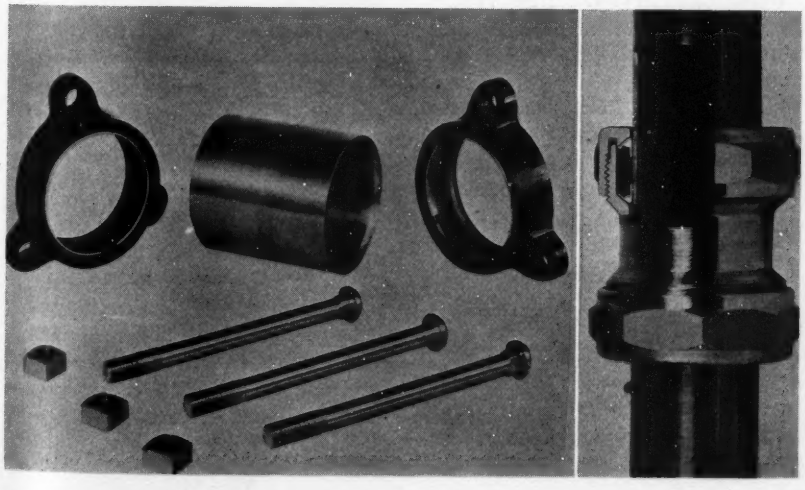
Pitsburgh Equitable District Heads Meet

The annual meeting of the District Managers of the Pittsburgh Equitable Meter Co. and the Merco Nordstrom Valve Co. was held October 5 to 8 at the main offices in Pittsburgh. Colonel W. F. Rockwell, President of the two companies, presided over the sessions. District Managers attending were C. R. Zeskey, Kansas City; M. J. Harper, New York; F. G. Swaffield, Columbia, S. C.; A. J. Kerr, Tulsa; Z. A. Stanfield, Memphis; D. E. Foster, Pittsburgh; C. F. Thomas, Buffalo; H. Boezinger, Los Angeles; A. L. Fritchley, Des Moines; P. C. Kreuch, Chicago; and W. H. Davis, Oakland, Calif.

Raybould Coupling Co. Names Pittsburgh Equitable Distributor

Announcement has been made of the appointment of the Pittsburgh Equitable Meter Company of Pittsburgh, Pa., as sole distributor for Raybould Couplings and Fittings, manufactured by the Raybould Coupling Company of Meadville, Pa. Grover E. Seaberg, Manager of the Coupling and Fitting Division, will direct sales for the meter company.

The Raybould Coupling is a patented article, said to furnish an extremely simple and leak-proof method of joining plain end pipe. It is described as consisting of two resilient compression rings, metal bushed at either end, encased in two flanges or follower rings which bear against a center ring acting as a spacer between the flanges. The compression rings provide the sealing medium while the flanges sustain all the mechanical forces applied in tightening up the coupling. In sizes smaller than 3" the flanges consist of two compression nuts and the coupling is fastened by tightening these nuts on a threaded center ring. Larger sizes employ long track head bolts and nuts to draw up the two flanges.



Making a pipe joint with the Raybould Coupling is claimed to be very rapid. The flanges on either end of the center ring are loosened but not removed and two sections of plain end pipe are then inserted until they encounter a tapered pipe stop located equidistant from the ends of the coupling. The two flanges are then tightened and the job is done.

In the Raybould Coupling design, the compression rings are metal bushed at either end to definitely confine and retain them in their prescribed area. It is said that a confined compression ring assures a continuous, leak-proof and secure joint equal to the life of the pipe. To permit the metal bushing to close tightly around the outer wall of the pipe, a clearance slot has been provided. This slot not only takes up the allowed clearance over maximum pipe diameter, but also compensates for maximum tolerances in all pipe diameters.

Features claimed for the Raybould Couplings are (1) Designed for high pressures, the ability of the pipe being the limiting factor. (2) Design provides greatly increased coupling grip on the pipe. (3) Contents of pipe cannot contact with or deteriorate compression ring. (4) Provides sustained grip over an indefinite period of time. (5) Joint is not affected by normal expansion, contraction or deflection of pipe. (6) Small diameter or out-of-round pipe does not affect coupling joint. (7) Does not require any sizing operations on ends of pipes to maintain close tolerances. (8) Requires fewer bolts. (9) Only three major parts to handle in field assembly (bolts excepted). (10) Minimum millivolt drop between pipe and coupling eliminates electrolytic action.

For complete information write, Pittsburgh Equitable Meter Company, 400 North Lexington Avenue, Pittsburgh, Pa.

Bulk petroleum shipments from Los Angeles harbor for the week ended October 1 amounted to 1,095,509 barrels.

Business and Professional Directory

THE
HANCOCK OIL COMPANY
of
CALIFORNIA

PRODUCERS - REFINERS
MARKETERS

J. R. PEMBERTON
Oil Umpire
1110 Security Title Insurance Bldg.
Los Angeles, Calif.
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MIchigan 8781

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VAndike 7053

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Oil Men's Calendar

C.N.G.A. Meeting First Thurs. Each Month.

November

11-17—National Motor Truck Show, Port of New York Authority Bldg., New York.

11-18—National Automobile Show, Grand Central Palace, New York.

14—Society of Automotive Engineers, Annual Dinner, Commodore Hotel, New York.

14-18—American Petroleum Institute, 19th Annual Meeting, Stevens Hotel, Chicago, Ill.

17—Industrial Marketers Assn. of So. Calif.—University Club, Los Angeles. Phone EX. 1225.

December

5-9—American Society of Mechanical Engineers, Annual Meeting, New York.

January, 1939

9-13—Society of Automotive Engineers, Annual Meeting, Detroit, Mich.

February

20-24—12th National Asphalt Conference auspices of The Asphalt Institute, Biltmore Hotel, Los Angeles.

March

22-24—American Association of Petroleum Geologists, Oklahoma City.

April

24-29—Oil World Exposition, Inc., Houston, Texas.

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